

SERVICE INNOVATION:
MANAGING THE INTERPRETATIONS AND LEARNING WHILE INNOVATING.
EVIDENCES FROM TWO LONGITUDINAL CASE STUDIES.

A thesis submitted in partial fulfilment of
The requirements of the degree of

Doctor of Business Administration

By

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*This work is dedicated to my Wife and Daughters,
To the memory of my Father, and
To my Uncle,
Who initiated and encouraged my interest in research.*

ABSTRACT

The present research has threefold aims: 1/ To review the existing research on service innovation and to demonstrate the existence and relevance of an innovation model, distinct from the one well identified for the products or processes; 2/ To demonstrate the interest of the multi-stage organisational learning model as being relevant for describing the nature of the innovative process in services; 3/ To validate the relevance of this model when applied to case studies.

After having reviewed the literature on service innovation and on individual and organisational learning, the research tested the relevance of the model by the implementation of two case studies. The collection of data was realised all along the two projects, selected in sectors of bank and retailing. Longitudinal methodologies was adopted in order to validating the temporal dimension of learning. Multiple interviews and triangulation provided reliable empirical data.

The results led to conclude on the relevance of multi-stage organisational learning models. Development process may be understood as a learning process realised by successive interactions at the different levels of the organisation that are the individual, group and organisation. However, rather than being embedded into physical features, the results of learning processes are “frozen” into new organisational routines, procedures, rules, and ex-post rationalisations. Consequently a model of New Service Development is proposed that could contribute to the improvement of the development process.

ACKNOWLEDGEMENTS

The thesis is often perceived as an individual work. At the opposite, many authors quoted in this research, underlined the collective and systemic aspect of the creation of knowledge. In other words, this research couldn't have been finished without the active support of individuals and institutions we would like to thank here.

I would like to begin with managers and employees of the firms, who devoted time, attention and goodwill all along the interviews, meetings and validations of this work. Jacques Bouriez general manager of the group CORA and Guy Bernier and Bernard Flouriot, General Managers of the Crédit Mutuel opened the access to the strategic information, to the data and to the managers. A special thank is given to the Development Managers, Fabienne Simon and Corinne Naguy for the Crédit Mutuel and Bernard Nennig for Cora. They devoted time, which is the most scarce resource during the ongoing process of innovation. By adopting a researcher in their development group, Jean Pierre Diague and his team provided a unique opportunity to observe the “innovating” process. More generally, the long journey of the longitudinal observations would not have been possible without the positive support of all the managers, store managers, purchasers, computer technicians who provided information.

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INTRODUCING THE RESEARCH: SCOPE AND PURPOSE OF THE RESEARCH.

The launching of multiple new objects that surround and transform our daily life is generally perceived as the result of innovation. Computers, mobile phones and pharmaceutical drugs amongst others symbolise today the benefits that result from the combination of science with business, of technology and marketing. Even if human progress were be separated from the outputs of science and technology, which are sometimes so controversial, it is generally accepted today that the constant creation of new commercial offers have contributed widely to economic development. Not surprisingly, both managers and academics have considered management and understanding of the innovation as one of their major concerns. This attention resulted in a huge flow of research and publications, which focused on the factors that could contribute to the transformation of firm's outputs. In this research, the analysis of the links that relate science and technology to the economic offer takes the largest place.

The central hypothesis, which asserted that changes in the offers resulted from scientific input, is backed up by multiple evidence. The multiple surveys¹ converge in the statement that material and immaterial investment devoted to R&D has never been so high and is constantly increasing. In return, the influence of economic agents on the course of scientific knowledge is commonly asserted today. The two movements of science and the economy are clearly separate fields until the entrepreneur builds a new and competitive offer that requires him to combine knowledge from the two fields. The appropriation of this scientific knowledge by the firms is said to be the major concern of most of the firms as underlined by G. Lambert (1993)². The logical consequence of this statement is that a huge domain of research on innovation has encompassed the respective influences and links between science and the economy. It has contributed to build the central “innovation paradigm”, which claims that the creation or renewal of a commercial offer relies on the multiple means that link together markets and sciences. This central assertion relies on the implicit statement that the value given to the clients is obtained by the manufacturing and delivery of tangible goods. This is the design and the manufacturing of the product’s attributes, as defined by Lancaster (1966)³, that are supposed to provide the expected functions and the efficiency of the good. In the

¹ O.C.D.E., *La technologie et l'économie. Les relations déterminantes*, Paris, 1992.

D.T.I Survey, (1997), *UK R&D, Scoreboard*, HMSO, Norwich, Quoted in P Trott, (1998), *Innovation Management and New Product Development*, Prentice Hall, London.

² LAMBERT, G., (1993), “Variables Clef pour le transfert de Technologies et le Management de l’Innovation”, *Revue Française de Gestion*, Juin-Juillet-Aout, pp 49-72.

³ LANCASTER, K.J., (1966), “A New Approach to Consumer Theory”, *The Journal of Political Economy*, Vol 74, April, pp 132-157.

creation of value, science and technology provide the knowledge that supports the product's capacity to fulfil a given utility expected by the consumer.

However, the growing service economy, that accounts for more than 70% of GNP and the employment of the developed countries, transformed the central place given to the products in commercial propositions. It is underlined by many authors such as Berry (1980), Eiglier and Langeard (1987) and J de Bandt (1994)⁴ that the content of offers are fundamentally different from the products. They logically pleaded for the creation of new frames of analysis. Saying that the offers are different should lead to the conclusion that the industrial paradigm of innovation must be adapted to the case of services. Surprisingly, the review of the service innovation literature realised by Johnes and Storey (1998)⁵ revealed that the empirical findings did not result in a theoretical framework that could support the understanding of the phenomena—

—

This constitutes the starting point and the purpose of this research. Given the specificity of the service offer, this thesis will aim to identify and validate a relevant theoretical frame that could account for the transformation and creation of new services. It will be demonstrated that organisational learning theory is a relevant theory for describing, explaining and predicting the phenomenon linked to the creation of a new service by firm.

Compared to products, the core assumption in services is that the offers differ by being mainly intangible as stated by Berry (1980). The customer benefit is the result of successive stages, which do not result in the exchange of tangible goods. Thus, the value is delivered while being produced, with no clear separation between the activity of consuming and producing. This single statement has a major consequence for the research on innovation in services. It results in three major differences as underlined by Callon, Laredo and Rabeharisoa (1996)⁶:

⁴ BERRY, L.L., Service marketing is different, *Business*, May-June, (1980), pp 24-28.
EIGLIER, P., LANGEARD, E., (1987), *Servuction*, Ediscience International Ed, 6^{ème} Edition
DE BANDT, J., (1994), "De l'Economie des Biens à l'Economie des Services: la Production de Richesses dans et par les Services", pp 309-338, in GADREY, J., DE BANDT, J., *Relations de service, marchés de service*, CNRS Eds, Paris.

⁵ JOHNE, A., STOREY, C., (1998), "New service development: a review of literature and annotated bibliography", *European Journal of Marketing*, Vol 32, n°3, pp 184-251.

⁶ CALLON, M., LAREDO, P., RABEHARISOA, V., (1996), *Que signifie innover dans les services: une triple*

“ the first one <between service and product innovation> is that there *is at the same time* innovation in the product and in the procedures. The second one is that there is no separation between product innovation and organisational innovation and the third is that there is no distinction between the creation of the offer and the activity of production and/or commercialisation”. Saying so tends to blur the distinction made in the early innovation theories between the technology and the organisation that produce the technologies. Rather than having produced an artefact that incorporated pre-determined possibilities, the organisation will aim at reinventing the process each time it occurs. At the opposite of the innovation viewed as the result of scientific knowledge, service innovation may appear as the result of the organisational knowledge. Many consequences have ensued from the statement of inseparability.

The first of them is that the identification and follow-through of service innovation may be difficult or impossible. G. Garel (1999)⁷ underlined that the development's trajectory for products is approximate, especially during its early stages. The intangibility of the processes extends this problem to the entire development in two ways. First the formal identification and definition is not easy because the processes only exist during the delivery of the offer. Second, a process that is co-produced by the client is due to vary according to the client's differences. Gallouj (1994)⁸ confirms this theoretical reasoning. Its research underlined that the historical approach of an innovation in the consultancy sector is not easy, due to the constant adaptation of the process to the client's expectations and behaviour. The same statement may probably be made in the banking, insurance or training sectors. As a consequence, research has to analyse the stability of the processes themselves. It could be difficult and may be impossible to make a relevant comparison between processes if they change for each commercial situation. In this case, the definition of innovation itself appears impossible. The intangibility, and therefore the heterogeneity of the service offer entails a careful classification of the processes, which will back the definition the "innovative component" of the offer.

This raises the first objective of this research. Speaking about an innovation entails its

rupture avec le modèle de l'innovation industrielle, *La Recherche*, Février 1997.

⁷GAREL, G., (1999), « La mesure et la réduction des délais de développement des produits nouveaux », *Recherche et Application Marketing*, Vol 14, n°2, pp 29-47.

⁸GADREY, J., (1994), “ Les relations de service dans le secteur marchand ”, pp 23-41, in *Relations de service, marchés de service*, CNRS Eds, Paris.

identification and in so doing the possibility of comparing the initial stage to the output of the development. Thus, the definition of service innovation entails characterising the interaction process during delivery and comparing it with the previous states. Due to the complexity and intangibility of the service offers, such identification requires specific methodologies that must be integrated to the research.

The intrinsic heterogeneity of the service processes entails asking questions about the influence of sectorial limits on the research. Services may be considered as a unique and broad category, which is opposed to the industrial sector, or on the contrary, may be analysed as being divided into multiple and heterogeneous segments. The choices that may be adopted here have a great impact on the potential comparability of the delivery. In the case of comparable processes, the examination of a broad service category, mixing the different sectors, will provide reliable results. On the contrary, a preliminary observation must be implemented in order to define the processes that may be regrouped into units of analysis. This necessitates further examination, which must precede the selection of events that will be observed.

These preliminary investigations should lead to a definition of service innovation that will support the selection of samples, the methodologies of investigation and finally the proposition of a theoretical model for N.S.D. (New Service Development). This first definition will be backed up by the existing literature that has defined the service offer and delivery processes. However, this first definition should not be considered as a "theoretical model", which supports the understanding of the innovative phenomenon.

As stated before, the "innovation paradigm" leads to the conclusion that the dynamics of the innovative process may result either from the progress of science or from the transformation of the markets. This leads considering the Research and Development and the Marketing departments as the major contributors to new product development. Due to the inseparability that characterises these processes, this assertion requires further investigation into the services. As the entire organisation supports the final outcome, the experience and knowledge required to perform the process is bound to be largely distributed within all the departments and between individuals. Eiglier and Langeard (1987), in their pioneering research, underlined the paradox of the birth of services. They occurred although no formal department appeared to

be in charge of their development. Rather than focusing on the links established between science and the markets, the research on service innovation will have to relate to the change in behaviour of the entire organisation.

Moreover, innovation is a dynamic process. Understanding its course entails the identification and analysis of the forces that induce a change between the initial stage and the final output. As inseparability has suggested that the change is supported by multiple actors, the sole explanation of market and science transformation is not sufficient to explain service innovation. Inseparability suggested that the change of behaviour and procedures should result in the transformation of the organisation itself. Changing the processes entails the renewal of the tasks previously produced by the individuals and departments. Such a reengineering should logically result in the transformation of the organisational features. The statement of this inseparability led to the conclusion that the nature and content of the new service development was bound to change. The purpose of N.S.D. is more than the design of a new process which matches the customer expectations. It should encompass the transformation of the organisation that will support the entire process. Such a statement suggests that the major concern of the literature on service innovation should be to identify the way the N.S.D. triggers and is supported by organisational change. By doing so, the existing research on service innovation could contribute to the emergence of a model explaining the entire process.

Unfortunately, the first empirical research on service innovation provided very few details on the processes themselves. Nothing is said about the factors that contribute triggering N.S.D. when any of the departments are formally in charge of it. The part of the internal factors that can support the development, and the nature of the tasks that are produced by the managers and employees during innovation are not clearly known. The links between the transformation of the processes and the transformation of the organisation have not been established and therefore not formally investigated. This lack of in-depth observations resulted in the impossibility of properly defining the innovative process. Understanding who is in charge of the innovative process and why, the reasons for action and the different means used to obtain a result emerge as being an entire research project. This requires collecting data and information all along its development. The project of penetrating the “black box” and following the process from its beginning to its launching must clearly be pursued. Providing an accurate and clear view of the development content will be the third aim of this research.

Nevertheless, the careful description of the development content should not be considered as a theory. F. Wacheux (1996)⁹ defined the potential contribution of research as “a causal and objective representation of the reality” that will be used in order to explain why the phenomenon occurred in a given situation. This quest may be more difficult for innovation than for other phenomena. In an initial approach, innovation may appear as a change in existing situations. One can conclude that there is innovation when a new product or interaction process is substituted for an existing one. Investigating changes requires that one renounces the idea of a constant and stable reality. Rather than considering the variables that induce a given state and its variance, the research on innovation must explain why the situations have changed, invalidating previous analysis. In other words, the nature of innovation suggests that what has been done previously is of no help in understanding what is underway. As a consequence, the theoretical purpose of this research is to explain the occurrence and the course of innovation from its conception to its launch.

Such a quest requires identifying the theoretical framework that accounts for both the existence of intangible processes and their dynamics of change. Due to the scarcity of existing research on service innovation, this preliminary investigation will review the existing innovation theories that could account for the reproduction of intangible processes and for their change. Then the adaptation of the model to the context of services must be discussed in order to validate their potential interest. This will be the fourth aim of this research.

Both descriptions of the development and explanation of innovation's dynamics induce a debate on the methodological choices. First, the word “dynamic” means that the change of a stage B is induced by one or many events in the stage A. Producing research on “innovating” rather than on innovation means that the causality chains are expected to be temporal. Research into the “organising” rather than the “organised”, into “innovating” rather than on “innovation” means that we have to understand the way processes are changing. This entails establishing causality by demonstrating that an event, which happens in moment A triggered a reaction in moment B and that the event in moment B was impossible without the occurrence of event in A. Such a temporal perspective also requires us to admit the indeterminacy of

⁹WACHEUX, F., (1996), *Méthodes Qualitatives et Recherche en Gestion*, Economica, Paris, pp 16.

innovation processes. As stated by Aldrich (1999)¹⁰: “Persons impatient with indeterminacy and unsympathetic to an evolutionary perspective ‘often commit a retrospective fallacy, viewing earlier events as though they were controlled by their subsequent outcomes’”. The consequence of this assumption is that the research will abandon the temptation to consider the outcomes of the process as the justification of the process. The understanding of the process must result from the examination of the process itself. Building the methodology that can provide those valid observations and establish the causal links will represent the fifth aim of this research.

Research objectives resulted in the following organisation of this thesis as described in the figure n°1 . The first part will aim at the characterisation of the processes, of their content and their variability. The methodological tools used in order to qualify them will be introduced and discussed. Then, it will be possible to provide a first definition of service innovation. Resulting from this preliminary definition, we intend to review and describe the theoretical fields that could explain the existence of repeated processes but also from their transformation. To do so, a review of the existing innovation theories will be carried out. Their interest for service innovation will be discussed in order to select the most relevant amongst them. The fit with existing research will be back up by an extensive literature review focused on service innovation. This will result in the discussion and adoption of one theoretical framework that is expected to provide interesting results if confirmed by observation.

The second part of the thesis will be focused on the analysis of the theoretical model itself. It will be introduced and extensively developed in order to define the kind of data that must be observed and the nature of the causal links that have to be validated. The fit of the model with previous empirical work on service innovation will be discussed. Those analyses will be used in order to build the methodology that will be developed in the third part of the thesis. It will develop and justify the adoption of the methodologies of data collection and interpretation. It will also develop the means and processes used to guarantee the reliability of those observations. It will also justify the choice of the companies selected for the research and will detail the innovative projects.

¹⁰ ALDRICH, H.E., (1999), *Organisations Evolving*, London, Sage Eds, pp 33.

The fourth part of the research will aim at providing observations on the innovative process. It will detail the actors who are involved in the development, their respective contribution to the process, the tasks which are produced all along the development, and the means and methods that are adopted in order to produce them. This part will also develop the interest of the theoretical model for explaining what is observed. For this purpose, the causal links between events will be discussed. This stage of the research will result in the production of a model of new service development that will apply our theoretical model to the specific case of service innovation. The examination of alternative models for the explanation of observed events will result in the definition of the limits of the research and by consequence in the recommendations for further investigation. The managerial recommendations will be proposed as the result of this research.

Figure n° 1 : Overall Summary of the Research

	Overall Purpose	Broad Topics and Conclusions
Part One	Aims at identifying a relevant model to explain the dynamic of the development of new services	<p>Chap 1: Identification of what will be modified by the design of the new offer / Identification of what can influence the design.</p> <p>Chap 2: Summary of what has already been written on New Service Development (N.S.D.). Previous contributions, limitations of the research. This chapter concludes detailing the need of a relevant model.</p> <p>Chap 3: Interest of Organisational Learning (O.L) Models for innovation, first, and then for the curse of N.S.D.</p> <p>Conclusion: <i>Interest to use the O.L. Model to understand the process of the NSD.</i></p>
Part Two	Aims at describing the O.L. models and to select those who can suit the N.S.D.	<p>Chap 1&2: Describes of the individual learning models. Interest for understanding the link between Individual and O.L..</p> <p>Chap 3: Describes the O.L. Models.</p> <p>Chap 4: Discusses the relevance of Multi-Level O.L. Models for Service Innovation.</p> <p>Conclusion: <i>Justifies the use of Multi-Level O.L. for the case of N.S.D. Defines what data is to be collected for research.</i></p>

Part Three	Aims at providing the methodology that will provide the appropriate observations and reliable data. The purpose is to build the validity of the research and, to do so, to provide the maximum data on the way the research has been done.	<p>Chap 1: Revisits the research questions</p> <p>Chap 2: Investigation on the N.S.D as a process.</p> <p>Chap 3: Methodologies: Overall Research design, Justification for the use of case studies methodology, Choice of the companies, Methodology for Longitudinal Survey,</p> <p>Conclusion: <i>Assesses the validity of the Methodology.</i></p>
Part Four	Provide the Empirical Findings, Discuss the interest of the multi-level O.L. Models for N.S.D, Provide proposals for further research and recommendations for managers.	<p>Chap 1: Analysis of the empirical findings on what is changing along the N.S.D.</p> <p>Chap 2: Reports the sensemaking and learning stages observed all along the innovation process.</p> <p>Chap 3&4: Discusses the validity and relevance of Multi-Level O.L. Model for N.S.D.</p> <p>Chap 5: Provides Proposals for further research</p> <p>Chap 6: Provides recommendations for managers and companies.</p> <p>Conclusion: <i>Concludes on the relevance and interest of the multi-level OL models for explaining the curse of the N.S.D.</i></p>

PART ONE: LOOKING FOR A MODEL OF SERVICE INNOVATION.

Five broad objectives are devoted to the first part of the thesis: introducing the research problem; providing an initial definition of service innovation and exploring its involvement for our research; reviewing previous research written on this topic and its limits; reviewing existing development processes and exploring their consistency with service development; finally summarising this theoretical approach of service innovation.

1. DEFINING SERVICE INNOVATION

In this chapter, we will firstly review the importance of innovation for the contemporary service industry. Then an in depth analysis of what is produced during the service delivery will be conducted. The conclusions will be used to analyse the nature of the change initiated during the innovative process and to give a definition of service innovation. After this, it will be possible to define the scope of our investigations.

1.1. PLACE AND IMPORTANCE OF SERVICE INNOVATION IN CONTEMPORARY ECONOMIES

Since they lead to substantial economic changes, service activities benefited from a growing attention. The consciousness of the importance of the service sector appeared very early in the United States. W.J. Regan (1963)¹¹ described his country as engaged in a “service revolution”, which would significantly transform consumer behaviour. Thirty years later, the “revolution” has resulted in one of the major macro-economic transformations. The constant decrease in manufacturing employment and a parallel increase in service employment has highlighted the pre-eminence of service industries. As underlined by Hoffman and Bateson (1997)¹², the service sector in 1993 represented 73 % of employment labour in Great Britain, 78% in United States and 60% in France. Nearly 90% of all newly created employment in the

¹¹REGAN, W.J., (1963), “ The Service Revolution ”, *Journal of Marketing*, July, pp 57-62.

¹²HOFFMAN, K.D., BATESON, J.E.G., (1997), *Essential of services marketing*, Dryden Press, London, pp12-13.

1980's was in this field as noted by Nasar (1992)¹³. Estimates suggest that most of the creation of new jobs in a foreseeable future will be service related. During the same period, the contribution of service activities to the economy has substantially grown to reach two thirds of the GDP for most of the industrialised countries. As stated by Hoffman and Bateson (1997)¹⁴: "this means that for the first time in U.S. history, the majority of industries in our economy do not produce, they perform". The same statement is true for most of the developed countries. This growing attention is reinforced by a context of structural changes, affecting most of the service sectors, and stimulating firms to innovate.

The deregulation of the markets and the internationalisation of the firms has stressed the importance of competitiveness for service firms. During the 1985-1995 period, the government's interference in the market was reduced for all the developed countries. The 1984th deregulation of AT&T in the United States opened up the liberalisation of telecommunication industries. The Japanese telecommunication monopoly was deregulated in 1985 and partial liberalisation followed in Europe in the 1990s. In the same way, deregulatory efforts made in other sectors such as transportation and banking strongly increased competition. For example, from 1985 to 1992 the number of U.S. commercial airline operators declined from 36 to 11. Then the newly deregulated firms, coping with the excess of demand and fierce price wars, began to build strategies based on their differentiation on the markets. Service quality and yield management amongst other models arose in mid 1980 as the result of the need for service companies to survive to their aggressive environment.

The context of economic globalisation reinforced this major change. The international trade of services has represented major growth opportunities for all the OCDE countries. The General Agreement on Trade of Services (GATS) signed in April 1994 in Marrakech, provided specific frameworks that will facilitate the internationalisation of financial services and telecommunications amongst other sectors as stated by Barcet and Bonamy (1994)¹⁵. Though under some restrictions, the acceptance of the movements of persons, linked to the implementation of foreign subsidiaries, will facilitate the exportation of know-how. The

¹³NASAR, S., (1992), "Employment in the service industry, Engine for the Boom of 80's", New York Times, January.

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¹⁵BARCET, A., BONAMY, J., (1994), "L'accord international de 1993-94 sur le commerce des services", Revue d'Economie Industrielle, n°68, 2ème Trim, pp 99-106.

TRIPs (Trade Related Intellectual Property Rights) part of the GATT agreement has increased the value of intellectual property by providing a strong protection for copyrights, patents, trademarks and trade secrets. In the same way, regional trade agreements such as NAFTA or the European Community has offered a similar approach for the facilitation of service exchange.

The opening of a liberalised international context provided new opportunities to service firms. For example, the ten leading consulting firms realised around 50% of their turnover abroad in 1994 ¹⁶. During the same period, five of the ten leading global retailers realised more than 25% of their turnover abroad. However, this development raised new threats by increasing the number and quality of potential competitors. Then, as stated by V. A. Zeithaml and M J Bitner (1996)¹⁷, the adaptation of the service either to local competition or to foreign market specificity becomes one of the competitive edges to success.

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Similarly, for the business to business markets, it is stated that the competition moved from products to services. Zeithaml and Bitner (1996) underlined that the industrial sectors also produce service. Eiglier and Langeard (1988)¹⁸, Furrer (1997)¹⁹ and Parasuraman (1998)²⁰ suggested that in business to business activities, the design of services added to the core products may provide competitive advantages to the manufacturers. As a consequence, mixed offers combining a full range of services, from after-sales services to an extended range of services are added into the offer in order to improve its potential benefits.

These global trends put innovation at the heart of the firm's competitiveness. The constant adaptation to a turbulent environment requires the development of a continuous flow of new offers. A similar situation but this time for products generates an impressive investment of attention and budget. As asserted by Cooper (1993)²¹, new products were expected to account for more than 42% of company sales in 1995. The investment in Research and Development

¹⁶Business Week, "Hired Guns Packing High Powered Knowhow", special 1994 Bonus issue, pp 92-96.

¹⁷ZEITHMAL, V.A., BITNER, M.J., (1996), Services Marketing, Mac Graw Hill Eds, pp 434.

¹⁸EIGLIER, P., LANGEARD, E., (1988), "Le couple produit-service dans l'offre globale de services aux entreprises", Revue d'Economie Industrielle, Vol 43, n°1, pp 119-128.

¹⁹FURRER, O., (1997), "Le rôle stratégique des services autour des produits", Revue Française de Gestion, mars-avril-mai, pp 98-108.

²⁰PARASURAMAN, A., (1998), "Customer Service in Business to Business Markets: an Agenda for Research", Journal of Business & Industrial Marketing, Vol 13, n°4-5, pp 309-321.

effort achieved around 3% of the GDP of United States, Japan and Germany. As result, R Cooper highlighted that: “ the single strongest predictor of investment value is “ the degree of innovativeness of the company ” ”. This means that, since the beginning of the 90s, the ability to develop fast and innovative products has generated an important part of the financial results of companies. More broadly, product development must be considered as a potential source of competitive advantage as stated by Brown and Eisenhardt (1995)²². It is the way in which members of the organisations diversify, adapt and reinvent their companies to match evolving markets and technological change. F. Jallat (1992)²³ underlined that innovative service firms show better results in terms of turnover, market share and profit. Therefore the development of new services, such as in the product business, must be considered as becoming a crucial activity to succeed in the marketplace.

Contrasting with these statements, research on service innovation remains fragmented and less developed than for products. A recent literature review realised by Johne and Storey (1998)²⁴ quoted only 53 significant papers, written between 1981 and 1998. To those papers, one must add the French Ph D dissertation of F Jallat (1992)²⁵. As underlined by Drazin and Schoonhoven (1996)²⁶: "Although service organisations and industries are a major economic force in the contemporary U.S. economy, research and theory exploring innovation in service delivery are rare....Focused research on the lower-cost, non technological innovation typical of service industries may reveal theoretical insights into organisational context issues not yet conceptualised. In a recent article, J Sundbo (1997)²⁷ asserted that no proper definition of service innovation is given in the research literature. The weakness of this research wouldn't have led to worrying statements if the flourishing literature on product innovation had been

²¹COOPER, R.G., (1993), *Winning at new products*, Addison-Wesley Publishing, Second Edition.

²²BROWN, S.L., EISENHARDT, K.M., (1995), *Academy of Management Review*, Vol 20, n°2, pp 343-378.

²³JALLAT, F., (1992), "Management de l'innovation dans les entreprises de service au particulier: concept, processus et performances", Thèse de Doctorat de l'Université de Aix-Marseille III, Juin.

²⁴JOHNE, A., STOREY, C., (1998), "New service development: a review of literature and annotated bibliography", *European Journal of Marketing*, Vol 32, n°3, pp 184-251.

²⁵JALLAT, F., (1992), "Management de l'innovation dans les entreprises de service au particulier: concept, processus et performances", *Op Cit*.

²⁶DRAZIN, R., SCHOONHOVEN, C.B., (1996), "Community, population, and organization effects on innovation: a multilevel perspective", *Academy of Management Journal*, Vol 39, n°5, pp 1065-1084.

²⁷SUNDBO, J., (1997), "Management of Innovation in Services", *Service Industries Journal*, London, pp 432-455.

relevant. But the claim made by Berry (1980)²⁸, demonstrating that “services are different”, advocated the development of a theoretical framework adapted to service specificity.

Because very few papers attempted to provide the definition of service innovation, our first task will be to analyse the nature and content of the service offer. This work will anchor the difference and similarities with the product offer. To do so, we will review the concept of the offer from two perspectives. We will try to define the offer as it is analysed by the consumer and then we will analyse the offer from the production perspective. This work will be used in the second part of our reasoning which concentrates on what is due to change during service innovation. Then we intend, in a third part, to review the papers that have been previously written on service innovation. We intend to use these different works in order to provide an accurate definition of service innovation. Then the fourth part of our work will be focused on the innovation literature. Given the analysis of what is changing during innovation, it will aim at the identification of a relevant theoretical framework. Finally, we will discuss the choice of a theoretical approach that could support the explanation of service innovation.

1.2. DEFINING THE SERVICE OFFER.

Given the diversity of the sectors and offers, defining the services is not an easy task. As a result, the definition of the scope and the object of an inquiry focused on services wouldn't be worth doing. Given the huge amount of literature already produced on innovation, the addition of new research entails the identification of some specific features that could justify further work. However, an initial look at the literature produced a set of closely interrelated elements. The business resulted in intangible benefits which were hardly understandable. They involved so closely both personnel and clients that it was often difficult to distinguish who was producing what. They relied on infrastructures that contributed to the benefits but remained the property of the firm. In such a context, even the identification of the offer remains difficult to define accurately. However, even if this task could appear as challenging, the understanding of innovation cannot be dissociated from the clear definition of the offer. This will constitute the first part of this work.

²⁸BERRY, L.L., Service marketing is different, *Business*, May-June, (1980), pp 24-28;

In his book, Grönroos (1990)²⁹ provided no less than eleven definitions, which will differ into some extent from the others. Three main features emerge from these definitions. The first one attempts to catch services through the result of what is delivered. Berry (1980) defined it as “deeds, processes and performances”. The second research stream highlights the intangible aspect of services. As stated by Kotler (1988)³⁰: “a service is any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product”. The third stream puts the emphasis on the way the service is delivered. It identifies the interaction as the essence of the production process, which will entail the result. As stated by Grönroos (1990), “a service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in the interactions between the customer and service employees and/or the physical resources or goods and/or the systems of the service provider, which are provided as solutions to customer problems”. This last assertion leads to the conclusion that stressing the differences between services and products means that they can be observed either at the customer level or at the firm level. Then, the definition of the service offers may be investigated through two research perspectives. On one hand, the customer perspective may reveal the way the services are perceived. This questioning will aim at the way the client identifies the main features of the offers. Those perceptions could also reveal if and how the customers separate the services from the product offers. Finally, the customer perspective will refer to the analysis of what is produced by the firms. This constitutes the second research perspective. The analysis of the nature of the offer and the means that are used by the companies in order to deliver them has been analysed through multiple articles. This perspective constitutes one of the main streams of the service literature. We intend now to detail each of the approaches.

²⁹GRONROOS, C., (1990), Service management and marketing, Lexington Books, pp 26-27

³⁰KOTLER, P, (1988), Marketing Management, 6th Edition, Englewoods Cliffs, N.J. Prentice Hall, pp 477.

1.3. DEFINING THE OFFER IN THE CONSUMER PERSPECTIVE.

The assertion of a clear distinction between services and products entails the observation of the client's perceptions. If this exam reveals specific features linked to the services, it will be possible to conclude to the existence of difference in the offers. Moreover, this examination could be used in order to support an initial definition of the offer.

Lancaster (1966)³¹ defined the conceptual framework that supports the analysis of the client's perceptions. In his perspective, the consumption of goods aims at the production of utilities or benefits. As stated by Lambin (1989)³²: "the consumer's choices are based on the service expected from the use of the product rather than from the product itself". It is said that it is not the products or even services that matter but the solution they provide to the client.

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Thus, the products are described as a set of attributes that can support the utilities expected by the consumer. Those attributes may be a tangible characteristic of the product. In the example of the tire market given by Lambin (1989), the resistance to the use and the shape of the tire are two tangible attributes that support the usefulness for the customer. However, those attributes may also be intangible. In the same example, the author spoke of the brand's notoriety, as being one of the components of the offer that is an attribute in itself. Because a well-known brand may associate trust to the product, it constitutes an attribute in itself. In this perspective, the tangible or intangible aspects of the offer do not matter in itself. What is important is the understanding of the attributes that account for the purchasing choice.

Such an assertion could blur the distinction between services and products. When the customers perceive the product as a mix of tangible and intangible attributes, their distinction with the services would appear as being unproductive. Further examination of the client perceptions invalidates this thesis. The research of Zeithaml, Berry and Parasuraman (1985, 1988, 1991)³³ underlined that the consumer's assessment of service quality relies on ten

³¹ LANCASTER, K.J., (1966), "A New Approach to Consumer Theory", The Journal of Political Economy, Vol 74, April, pp 132-157.

³² LAMBIN, J.J., (1989), Le Marketing Stratégique, Mac Graw Hill Ed.

³³ PARASURAMAN, A., ZEITHAML, V.A., BERRY, L.L., (1985), "A Conceptual Model of Service Quality and its Implications for Further Research", Journal of Marketing, 49, pp 41-50

dimensions, as described in figure n°2. The theoretical framework, built on repeated and quantitative measures, demonstrated that the expectations for a given service will be structured around ten attributes which have been regrouped to five in further research.

Figure n°2: The ten dimensions of service quality.

Dimension	Description
Tangibles	Appearance of the physical facilities, equipment, personnel and communication materials
Reliability	Ability to perform the promised service dependably and accurately
Responsiveness	Willingness to help customers and provide a prompt service
Competence	Possession of the required skills and knowledge to perform the service
Courtesy	Politeness, respect, consideration and friendliness of contact personnel
Credibility	Trustworthiness, believability, honesty of the service provider
Security —	Freedom from danger, risk or doubt
Access	Approachability and ease of the contact
Communication	Keeping the customers informed in language they can understand and listening to them
Understanding the customer	Making efforts to know the customers and their needs.

This analysis of the main attributes expected by the consumer during service delivery confirmed the distinction between services and product attributes in many ways. The attributes linked to “Courtesy”, “Access”, “Responsiveness” and “Communication” clearly refer to the interaction of the client with the front line employee. This refers to the offer as being an interaction between people and the organisation rather than being a utility supported by the tangible aspect of a given product. This underlined clearly that one attribute of the service offer is made of an interaction process. The way it is perceived, for instance the way the organisation is making efforts to facilitate the contacts and interaction processes, will provide the final utility to the client.

Similarly, the “Competence” and “Understanding the customer” dimensions refer to the front line people’s skills during the service delivery. Their attitudes and skills are assessed during

PARASURAMAN, A., ZEITHAML, V.A., BERRY, L.L., (1988), “SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality.”, Journal of Retailing, 64, Spring, pp 12-40

the interaction. Those important dimensions also exist for products. However, the ways the client will assess them are radically different. In the case of services, the assessments will rely on the explicit and tacit transfer of information during the interaction between people. In the case of products, they may be deduced either from the product reliability or from the information delivered indirectly by the company.

The same observations must be made for the “Tangible” dimensions. In the two cases, the customers base their perception on the observation of the tangible attributes of the offers. However, there is no transfer of property in the case of the service. The tangibles will be assessed on their ability to support or to facilitate the ongoing processes rather than on the utility they can produce after the purchase. This means that the assessment is realised simultaneously with the delivery. In consequence, this assessment is also strongly correlated to the delivery process itself. Finally, only two dimensions of “Security”, “Credibility” and “Reliability” could be considered as being very similar to the product.

The Parasuraman and Al research on quality demonstrated that clients defined the service offers through many criteria which are specific to services. This provides an indirect way of defining what could constitute the service offer. First, the clients identify the offer through the interaction process with the personnel. Second, they define the offers by a set of tangibles that support or facilitate the process. Third, they will integrate in the offer the duration dimension of the offer as they expected reactivity from the personnel. Fourth, they expect to be recognised as an active participant in the interaction. From the consumer perspective, innovating or producing a new service offer means transforming the utilities provided into one of these four dimensions.

The customer perceptions offered a rich way to qualify the service offer. It also reinforced the distinction of service offerings from the product offerings. These statements supported the definition of the service offer given by Gadrey, Gallouj and Weinstein (1995)³⁴: “ To produce a service is to organise a solution to a problem (a treatment, an operation), which does not principally involve supplying a good. It is to place a bundle of capabilities and competencies

PARASURAMAN, A., ZEITHAML, V.A., BERRY, L.L., (1991), “Understanding Customer Expectation of Service”, Sloan Management Review, Spring, 1991, pp 39-48.

(human, technological, organisational) at the disposal of a client and to organise a solution, which may be given to varying degrees of precision". This advocates for a separate innovation theory which could include the entire scope of what will change during the offer's change. For instance, such a theory would have to explain the way the firms transform the interaction process between the client and the customer. Nevertheless, the consumer approach does not say anything about the way the firms are producing the offers. The consumer's perspective did not say anything about the way the firms identified the client's problems, about the way they built the bundle of capabilities and competencies, and about the way they built the solutions. To do so, the large stream of research focused on the services themselves, has to be reviewed. This will enrich the analysis of what is due to change during service innovation.

1.4. DEFINING SERVICES FROM THE PROVIDER PERSPECTIVE

The strong development of the service sector has resulted in a voluminous literature focused on the emergence of a new management perspective. This growing attention on service industries has provided the opportunity to build a new academic field as stated by Berry and Parasuraman (1993)³⁵. Many research has summed up the five main characteristics common to all kinds of services: the process nature of the services, their intangibility, the inseparability of production and consumption, the heterogeneity and the perishability. These statements are of prime importance for the understanding of the complex nature of the service offers. We intend first to introduce the intangible aspects of the services.

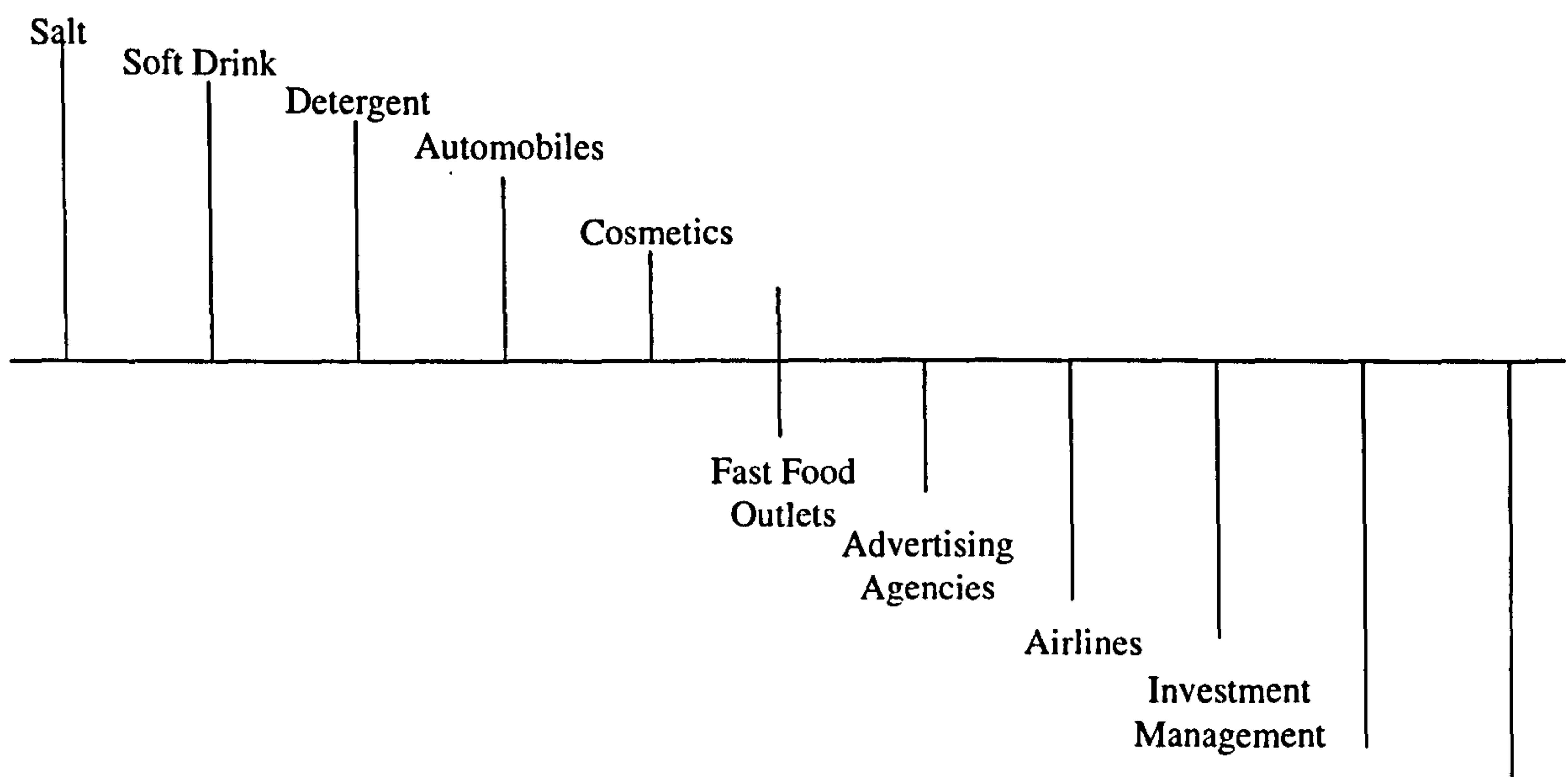
³⁴GADREY, J, GALLOUJ, F., WEINSTEIN, O., (1995), " New modes of Innovation: How services benefit to industry ", *International Journal of Service Industry Management*, 6(3), pp 4-16

³⁵BERRY, L.L., PARASURAMAN, A., (1993), " Building a new academic field- The case of Services Marketing ", *Journal of Retailing*, Volume 69, 1, Spring, pp 13-60.

1.4.1. Intangibility and Tangibility of the service offers

The former Lynn Shostack's article "Breaking free from Product Marketing", published in 1977³⁶, provided the basis of the literature to come. She highlighted that, by their intangible aspects, services were different in themselves from products and created new and unsolved problems. Reviewing different markets, she classified commercial outputs according to their degree of tangibility as developed in figure n°3. At one extreme, basic products such as Salt are tangible-dominant. At the other, Consulting or Teaching are intangible-dominant. In between, she distinguished a whole range of commercial propositions made up of a mix of tangible and intangible.

—Figure n°3: Classification of offers according to their tangibility.



This classification of the sectors according to their intangibility provided an initial insight into the nature of services. It is not said that service companies only produce an intangible utility.

³⁶SHOSTACK, L.G., (1977), "Breaking free from Product Marketing", *Journal of Marketing*, 41, April, pp 73-80.

They also deliver products to their clients. For instance, the main activity of a restaurant is the delivery of food. Its value chain included the transformation of products. It is characterised by a purchasing stage, a transformation of the goods and then a delivery process. However, what is asserted by this classification is that the service incorporated further value for the client. If not, there wouldn't be any difference between a restaurant and a firm producing the dishes sold in the hypermarkets. Though being intangible, this "service utility" will contribute to the client's satisfaction. Multiple intangible criteria may be among other schedules, the personnel's attitude and the process of ordering will contribute to the satisfaction or dissatisfaction as demonstrated in the previous chapter. Though the tangible and intangible part of services are strongly intricate and interrelated, we intend to focus our research on the transformation of the intangible part of the service's utility.

Concentrating our research on the intangible part of the offer opens new opportunities for research into innovation. It enlarges the scope of our investigations to a new kind of area. Here, we will not analyse the way firms are designing, testing and producing new objects. We will not focus the attention on the change of the technologies that support the manufacturing of new articles. We intend to focus on the tangible and intangible ways that are used by the service firm in order to create and deliver an intangible value. By doing so, it is possible to assert that further research deserves efforts and can lead to promising results. Then, our research "object", service innovation, will be defined, in this first step, as the transformation of the intangible value delivered to the customer. This concern will be developed independently from the goods that may be transformed or simply delivered during the purchase.

This choice raises the first crucial question of the identification of innovation. In their well-known article, Parasuraman, Berry and Zeithaml (1985) underlined that due to their intangibility, service offers are difficult to inventory. This means that the identification of the intangible part of the offers and therefore of their change must be the first concern of our research. The impossibility to formalise the existing processes would mean the end of our inquiry. The definition of services as processes will provide the conceptual basis in order to analyse what is actually produced by companies.

1.4.2. Service Offers as Processes.

Defining services offers as processes means that the client's benefit is not delivered through physical objects but through a process. Successive stages occur which aim at the transformation of information and/or of a physical state. The delivery could not be achieved without a minimum interaction between the client and the organisation in what is called by Jean Gadrey (1994)³⁷ a "service relation". The role adopted by the clients, the duration of the process, the frequency of the successive stages, the content of each of them and their uncertainties must be considered as the offer itself. Therefore, its transformation may be one way to produce service innovation.

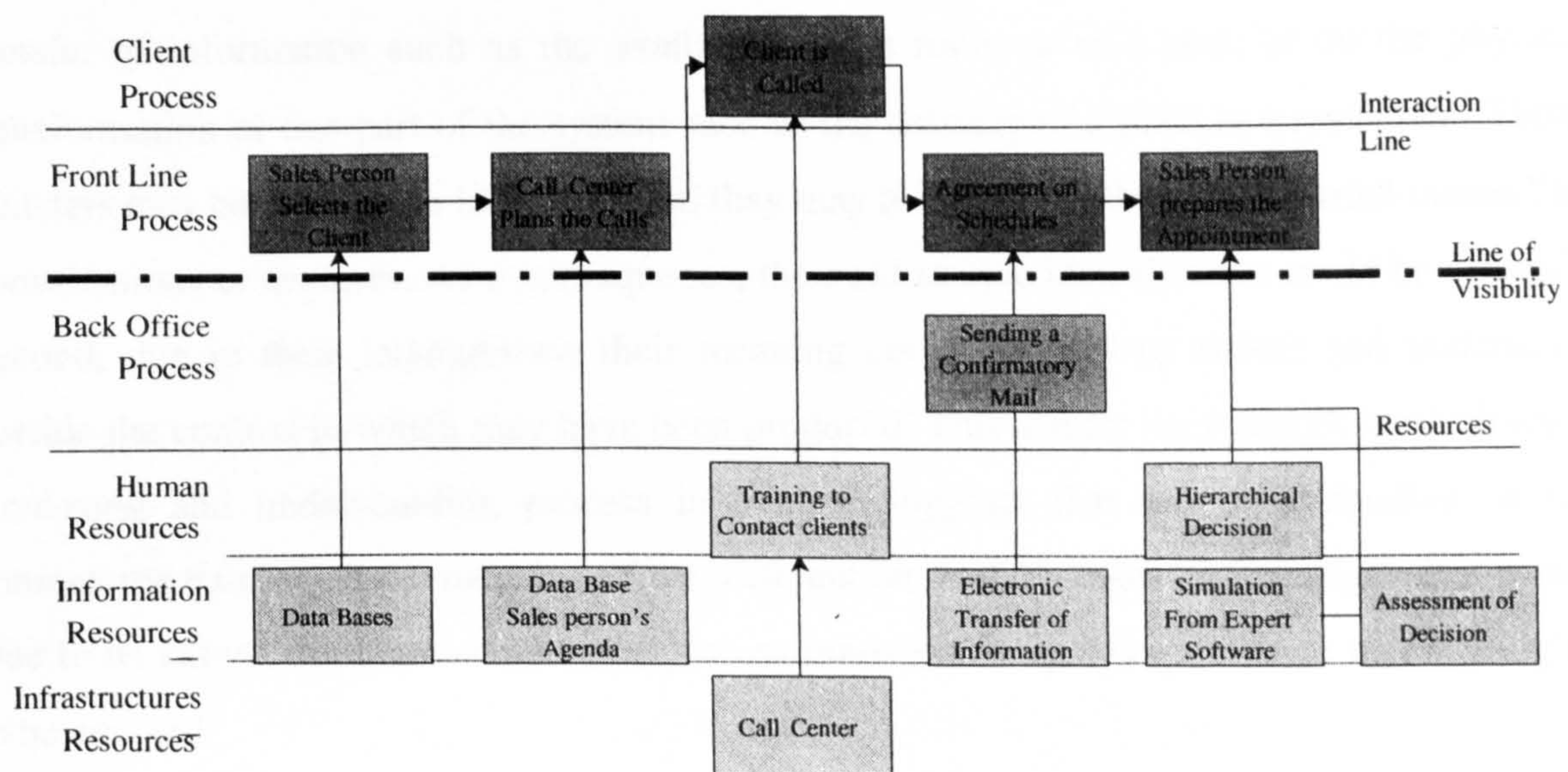
The best way to understand delivery processes is probably to materialise them with the "blueprinting" chart, inspired from operation management flowcharts, as recommended by L. Shostack (1984)³⁸. By drawing the succession of operations, what is produced in each of them and who performs the task, it is possible to understand that, even if the final result is not tangible, servuction is achieved through material actions. Moreover, the blueprinting model distinguishes the different stages as perceived by the consumers from the stages produced by front line staff and back office personnel. L. Shostack's (1984) model divides the analysis into three broad areas as described in the figure n°4.

³⁷GADREY, J., (1994), "Les relations de service dans le secteur marchand", pp 23-41, in Relations de service, marchés de service, CNRS Eds, Paris.

³⁸SHOSTACK, L. G., (1984), "Designing services that deliver", *Harvard Business Review*, January / February.

Figure n°4: The Blueprinting Model applied to client's appointments.

(Adapted from Shostack, L.G., 1984)



First, the customer action area integrates the tasks performed by the client during the purchase, the consumption and the evaluation of the service. Because they are very different in content and order, this model separates the tasks achieved by the client during the interaction process from the one performed by the personnel. For example, the client of a retailer will have to transport the products he intends to purchase. He will have to achieve one step of the delivery process by himself independently from the personnel tasks. This highlights the importance of the client as being a co-producer of the service and by so the importance of considering its participation in the innovative process. This argument lead to the conclusion that an inquiry on the service innovation must include a careful description of the new customer process, including the new tasks he will have to perform. Like the staff members, the client as a producer must take in charge some part of the process. By doing so, he will have to co-ordinate his efforts with that of the organisation. Therefore, investigations on service innovation must include the examination of the means used by the organisations in order to lead the client to produce the appropriate behaviour during delivery

Second, the contacts between the client and the firm are materialised by the interaction line. This limit delineates the actions that are driven exclusively by the client from the one that entails co-ordination. This co-operation aims at the transformation of both tangible and intangible state of one or many parts of the system. For instance, it may be focused on the transfer of information such as the availability of a room or of a seat, or on the physical transformation of one part of the system such as the delivery of a plate in a restaurant. Those transfers may be difficult to identify. First, they may be conveyed through informal means like conversations or gestures. As a consequence, their exhaustive identification could be difficult. Second, due to their intangibility, their meaning could be hard to collect and understand outside the context in which they have been produced. This affects the research methodology. Analysing and understanding process innovation suggests that the understanding of the content, the nature and the meaning of the different interactions must be investigated in detail. Due to its nature, the understanding of process innovation requires qualitative methodologies to be adopted.

Third, the parts below the line included all the tasks performed by organisation. Three areas are distinguished. The first area includes the activities related to the process delivery and performed by the frontline employees. Some of them may be directly concerned by the interaction such as the delivery of information. Some other may be focused on the achievement of administrative tasks that contribute to the process. This distinction between the interaction tasks and the others is of primary importance for the definition of service innovation. If the interaction processes with the clients are removed in terms of the number of stages, of their content or the duration of the process, then one can speak of service innovation. On the other hand, if a change in the process of delivery does not transform the interaction with the client, then it can be concluded that an organisational innovation exists. For instance in the bank, the employee through different technologies may do the checking of the customer's account. For the client, what matters are the final figures and the process induced. The client cannot perceive the kind of software adopted by the bank in order to produce the information. So, in this example the substitution of technologies that do not transform the interaction firm-client would not be integrated into the scope of our research. However, the possibility for the client to check its account by himself by the use of Internet will be considered as a service innovation.

Fourth, the Blueprinting model distinguished the tasks realised by the front line employees from the ones performed in the back office and in support activities. This distinction highlights that due to the complex tasks which requires a strong job division and specialisation, many sub-parts of the organisation support the final delivery. Information technologies, infrastructures and specific skills of account managers, lawyers and logisticians are required to deliver the appropriate processes and products. The change in the way these activities are provided may constitute an innovation for the organisation. For the same reasons as before, we will consider them as being an innovation if they contribute to a change in the delivery process.

Finally, the Blueprinting model contributes to the definition of what may be transformed during innovation. First, changes may be made to the transformation of one or many stages of the process. The introduction of new scanning machines in the retailing industry provides a good example of the changing of one point of the process. Scanners were introduced in stores at the beginning of the 80's. They are able to read the bar code printed on each product and to display the price instantly at the checkouts. The potential benefit for retailers has been to achieve better productivity by increasing the number of consumer processed per hour. Many retailers have recently introduced client innovation as an experiment. It consists of providing each customer with do-it-yourself checkers. Instead of waiting for the staff to run each item through the scanner, the clients use the scanners by themselves at special check-out points or even with portable scanners. This transformation of the process could contribute eliminating the waiting time and should so contribute to better client satisfaction. This case must be considered as a process innovation for one part of the process.

The second way of making intangible innovation is the creation of a new process. Club Med, the French-based resort chain, provides a valuable example to illustrate this point. One basic format is proposed to customers all over the Club Med's holiday villages. Accommodation, dining areas and sports facilities like swimming pools are delivered the same way everywhere and included in the basic price. Nevertheless, each site presents unique possibilities. Villages based near mountains may offer skiing whereas those based near the seaside may offer sailing or windsurfing. The renting of equipment, special schedules, transportation and insurance, all these special activities require a different process, geared specially to local conditions. Entirely new processes, specific to each village must be developed. As often in services,

multiple interrelated processes are conducted at the same time, increasing the complexity of the offer.

The third way lies in the management of time. This means that a change may occur in the time of delivery. However, it may also occur in the duration of a given process. The example of the scanners given previously illustrates this perspective. When the first scanners were introduced, they provided a potential increase in the check out process. It was possible to increase the number of client being processes each hour. At this point of the scanner's introduction, one can conclude that there is or is not service innovation from the customer's point of view. If the firm takes this opportunity to reduce the duration of waiting time at the check out, then one can assert that further value is delivered through the reduction of the length of the process. The duration of the checkout is reduced producing further value to the client. In this case, it is possible to conclude that there is service innovation. But on the other hand at the opposite the firm may decide to increase productivity. To do so, it will compensate the increase of the number of clients processed each hour by reducing the number of open checkouts for a given period. In this second case, we will conclude that there is an innovation in the technology that does not impact on the final benefit provided to the client. In this case, one cannot speak of service innovation.

The second example of the development of an hourly meal by the Mercure Hotel chain illustrates how new services reinforce the importance of the duration of the process in innovation. The restaurants of Mercure Hotel, a company of the Accor group, created this new offer, in order to stimulate demand for business lunches. The concept is the delivery of a quality meal within an hour. The customer benefit is to avoid wasting time over lunch. The lunch proposal is made of one starter, a main course, a glass of wine and a coffee, all these courses being previously proposed by the restaurant. In this case, the source of innovation is the commitment to the duration of the meal. For this reason, one can speak of a time-based innovation.

The three possible dimensions of change in the delivery process refer to the possible variations during the delivery. The blueprinting model also provides a good way of delineating our inquiry. *If a change occurs in the front line or in the back office process, for efficiency reasons for example, but without any involvement of the client-organisation interaction, then*

one must analyse it as an organisational change and not as a renewal or an improvement of the added value delivered to the customer. On the contrary, if a new process occurs as an intentional change in the delivery process then one can speak of a service innovation.

By providing an accurate view of what is produced, the Blueprinting model highlights that the process is designed through the number of stages, the content of each of them and their duration. Though it must not be confused with the result, the process and the way it is organised must be considered as one essential component of the offer. When not well performed or designed it can discourage the consumer. However, a good design may be one of the major reasons to purchase services or increase perceived quality as illustrated by Gummesson and Kingman Brundage (1991)³⁹ for railroad companies. Then it will be used in order to materialise the changes resulting from innovation.

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It also supports an initial definition of service innovation for its intangible part: “Service innovation for its intangible part is achieved through the intentional transformation of one or many stages of the interaction client-organisation. This change may be the result of the intentional transformation of one or many stages, of the design of an entirely new sequence of actions, or of the change in the duration of the process. This definition excludes the organisational changes which do not result in the transformation of the interaction processes. It excludes also the transformation of the tangible goods or information that contributes to the final value delivered to the client”.

The complexity of an entire process and the difficulty to maintain a standard interaction for a large diversity of customers induces variability in the final offer. If each offer differ partially or significantly from the other, then the word innovation may simply have no sense. Then the heterogeneous nature of the process part of service must be included in the definition of scope of our research.

³⁹GUMMESON, E., KINGMAN-BRUNDAGE, J., (1991), “Service Design and Quality: Applying Service Blueprinting and Service Mapping to Railroad Services”, in Quality management in Services, Eds P Kunst and J Lemminck, Maastricht.

1.4.3. Perishability, Heterogeneity.

The complexity of the interaction between people induces heterogeneity in the final offer. This means that the output may strongly differ from one moment or client to another. We intend here to review the origins of perishability and heterogeneity and then will discuss their implications for our research.

The intangible part of service offers is perishable. In contrast to goods, and because of their intangibility, it is impossible to stock offers. As a consequence, the instantaneous adaptation of the production level to the variation of demand is required in order to meet the customer's expectations. For instance, the variation in demand may fluctuate widely within 15 minutes in a retail store. This may result in the transformation of the processes by the increase in the waiting periods or by the adoption of faster processes of delivery. If demand exceeds production capacity, the employees, submerged by the demand, could find solutions by transforming the service specifications and in doing so will increase the heterogeneity of the service. This suggests that the service offer may potentially change from time to time, according to the balance between the demand and the offer. In this way, perishability has an impact on service heterogeneity.

The delivery process may be characterised by a strong involvement of the individual who may be either the client or the personnel. As said before, the clients are involved as producers of some part of the process. As people may differ from one person to another, from day to day or even from hour to hour, the resulting interaction between the clients and the organisation will largely differ. The resulting outputs of the services are therefore recognised as being potentially heterogeneous. The intangible process is a unique output, well fitted with the temporal expectations and behaviours of the participants. A constant flow of differentiated processes will result from each service situation. This variability may be extreme to the point that each interaction will result in a specific offer as in consultancy.

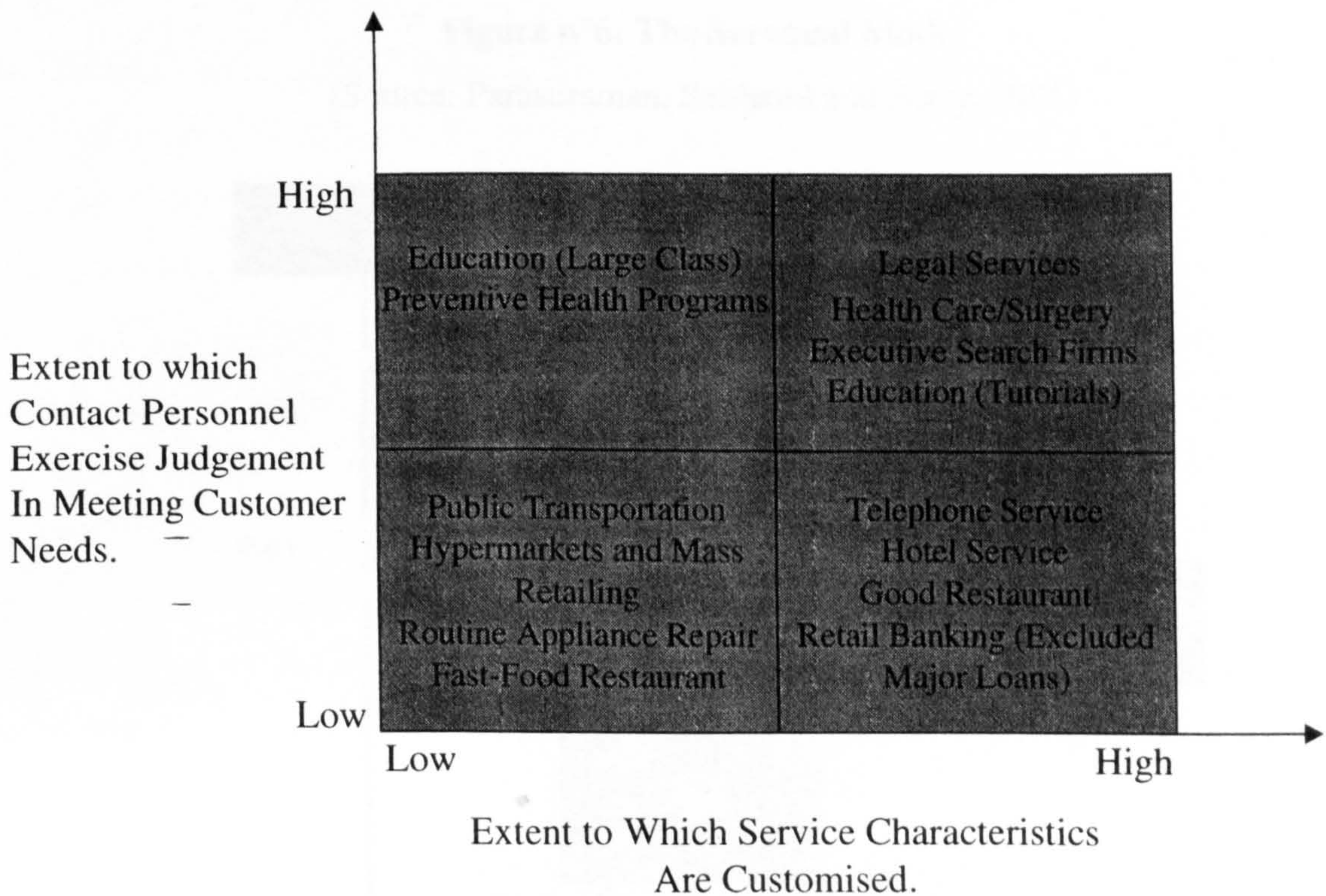
C. Lovelock (1983)⁴⁰ by doing a synthesis of previous research on service classifications provides a relevant framework. Two main dimensions provide the basis of a matrix: The first one is “the extent to which service characteristics are customised” and the second “the extent to which customer contact personnel exercise judgement in meeting the individual customer needs”. The result of this analysis is displayed in figure n°5 bellow.

According to this classification, the most standardised services are in the fourth quarter where processes remain unchanged whatever the customer might be. A fixed routine is designed and imposed to the client. Short menus with limited choices for fast foods, fixed routes in predetermined schedules for public transportation, given assortments for retailing provide a good example of those predetermined processes. At the opposite, services delivered through a great adaptation of the process are regrouped in the first quarter. It means that each delivery must be considered as an adaptation of the process to the existing context, expectations and behaviours. A strong expertise is required to build propositions. In this case, standardisation degree is very low.

⁴⁰LOVELOCK, C., (1983), “Classifying services to gain strategic marketing insights”, Journal of Marketing, Vol 47, Summer, pp 9-20, p 15

Figure n°5: Customisation of Service Characteristics

(Source: C Lovelock, 1983)



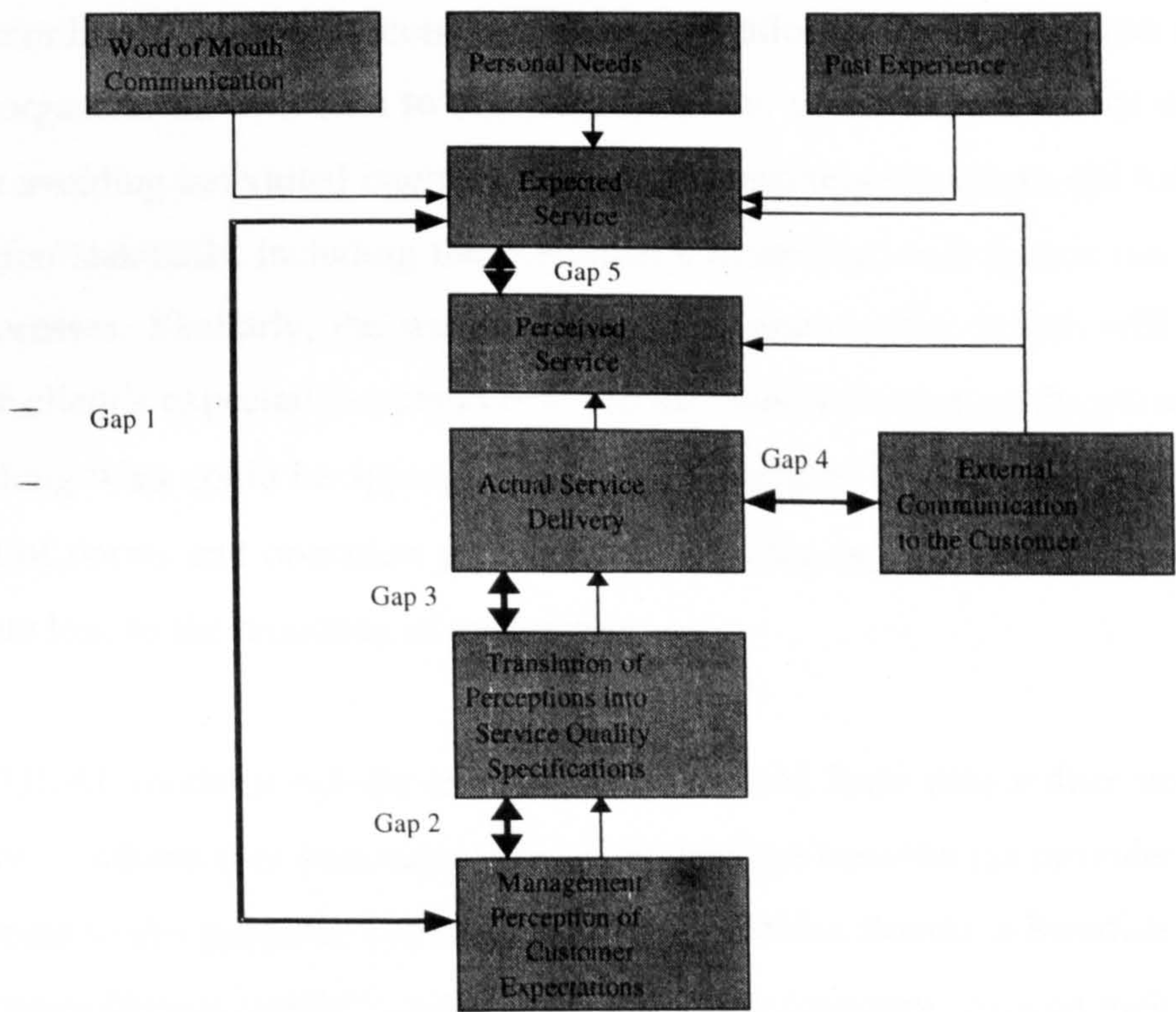
Some limits alter this classification. One of the most important is that some service firms provide a large range of services as stated by Lovelock (1983), some of them being mass standardised products and others being largely customised. Banks may for example propose services in the fourth quarter of the figure. Standardised services, such as the basic bank account, present very few possibilities to customise the product according to customer specifications. On the other hand, the same organisation may offer, in some cases for the same client, a sophisticated investment that will require highly skilled personnel. Then the retailing banks may be classified in all the quarters of the figure. A great heterogeneity results in the low predictability of the client's satisfaction. Not surprisingly, companies but also customers have developed strategies that aimed at the reduction of uncertainty.

The SERVQUAL model highlights the way the norms and the standardisation of the operation procedures may contribute to the reduction of the potential heterogeneity of the process. As

underlined by Parasuraman, Zeithaml and Berry (1985, 1988, 1990)⁴¹ in their conceptual model of service quality, the delivery of homogeneous and qualitative offers will be based on an analytic methodology described in figure n°6.

Figure n°6: The Servqual Model

(Source: Parasuraman, Seithaml and Berry, 1985)



This normative model encompasses both the client’s perspective and the firms approach to service quality. Satisfaction is achieved when the client’s experience of the services matches his expectations. So the production of qualitative offers induces first devoting means to the understanding of client’s expectations. Through multiple surveys, sources and analysis, the information will be collected and will be used in order to establish the quality standards and

⁴¹ZEITHAML, V.A., BERRY, L.L., PARASURAMAN, A., (1985), “ Problems and Strategies in Service Marketing ”, Journal of Marketing, Spring.
 ZEITHAML, V.A., BERRY, L.L., PARASURAMAN, A., (1985), “ A Conceptual Model of Service Quality and its Implications for Future Research ”, Journal of Marketing, Vol 49, pp 41-50.
 ZEITHAML, V.A., BERRY, L.L., PARASURAMAN, A., (1990), "Guidelines for conducting service quality research", Marketing Research, December, pp 34-44.
 ZEITHAML, V.A., BERRY, L.L., PARASURAMAN, A., (1988), "Communication and control processes in the delivery of service quality", Journal of Marketing, Vol 52, April, pp 35-48.

operating procedures, which correspond to the expectations. Then, the delivery of the front line employees must implement and respect those guiding principles in order to satisfy the client. Similarly, customer satisfaction entails that the promises made via external communication matches the actual delivery processes.

Though it is not its initial intention, this model leads to the reduction in heterogeneity in two ways. First, the implementation of this methodology means that the offers are explicitly designed according to the expectations. The implementation of the Parasuraman and Al model within the organisations will lead to the standardisation of some parts or the entire delivery process. By avoiding individual interpretations of the business situations, the formalisation of the interaction standards, including the personnel's behaviour, will reduce the generation of random processes. Similarly, the use of external communication, which will contribute to building the client's expectations, could result in the standardisation of the client's behaviour. By establishing what could be appropriate actions, processes and attitudes, the adoption of a guiding set of norms and operation procedures lead to the reproduction of similar processes and therefore lead to the reduction of uncertainty.

The SERVQUAL model is not the only way by which the firms may reduce uncertainty. The definition of an adoption of contracts defining the relation between the provider and the client may contribute to this purpose. The example of Asea Brown Boveri, a Swedish multinational, related by Rajiv Grover (1995)⁴² explained the way this company changed their relations with their banks. The initial process was based on a transactional approach. Each time a letter of credit was required, they would have to negotiate the terms of the transaction with different banks in order to benefit from the best deal. This required a lot of time and skills from the management. Realising the waste of resources, which was induced by the choice of this process, they decided to establish a close relationship with a single bank. A given process and fees were negotiated only for a long period. By doing so they have been able to reduce the time of the process from three weeks to three days. In the same way, the bank gained too by increasing the occurrence of continued business.

⁴²GROVER, R., (1995), Theory and simulation of Market Focused Management, Fort Worth, The Dryden Press Eds.

A relationship, in opposition to a transaction approach, could exist each time the purchase cycle is included in a long-term perspective, with a strong or personal interrelation between the buyers and the sellers. As stated by Kelley and al (1990)⁴³ but for the individual relation: “ if the behaviours, feelings and thoughts of two individuals are interrelated with a mutual and causal link, then the two individuals are interdependent and a relation does take place. A relation may be defined as a close relationship if it lasts and involves intense, frequent and diverse interactions ”. A client involved in a relationship with his supplier will establish long term relations, which are supposed to decrease the risks and the costs of economic exchange.

Co-operative behaviour refers to the involvement of both seller and buyer in influencing or in creating an interaction process. When a transactional approach describes them as being passive in a stimulus-response schema, the co-operative seller and the client contribute intellectually and physically to the delivery of the offer as laid out by Eiglier and Langeard (1987)⁴⁴ and Kelley and Al (1990). Co-operative behaviour suggests that both parties will have an influence in the relationship process. Then, analyses on co-operative behaviour will focus on relational investments (finance, physical, duration, etc...), on the negotiation strategies and on the risks as stated by N'Goala (1998)⁴⁵.

The co-operations between client and firms may be laid down in formal contracts or within the framework of informal agreements. The nature of this contract may be investigated in itself as one of the major components of the service relation. The contractual aspect of the relationship refers to the formalisation of an expected process. Formal definitions of the role of each actor and of their respective responsibilities and duties contributes to decreasing the uncertainties of individual behaviour. By doing so, formal or even informal contracts contribute to the standardisation of the process.

As result, related to the service innovation, this examination underlined standardisation as important criteria for differentiating the new service development process. In the case of a standardised process, it is possible by listing the Standard Operation Procedures to know

⁴³KELLEY, S.W., DONNELLY, J.H., SKINNER, S.J., (1990), Customer participation in Service production and Delivery, *Journal of Retailing*, 66, 3.

⁴⁴LANGEARD, E., EIGLIER, P., (1987), *Op Cit* p 24

⁴⁵ N'GOALA, G., (1998), “ Epistemologie et théorie du marketing relationnel ”, *Actes du XIV congrès de l'AFM*, Bordeaux, pp 473-495.

exactly what has changed, when this change happened and the way this change was been achieved. This way of innovating will focus on the creation of a new set of rules and on its extensive adoption by a distribution network. The ability to translate customer wants and needs into specifications, the adoption phenomenon, the training of the staff in the new procedures and previous experience of change should be amongst other crucial factors to achieving this success. The capacity to manage internal marketing as defined by Grönroos (1985)⁴⁶ will lead to the support of front line personnel and then should increase the probability of success.

On the other hand, it would be difficult to do the same for customised processes requiring different skills from personnel. In this last case, the variability of the offer, which is partly or totally renewed for each transaction, will invalidate the traditional vision of innovation. This second way will result from a strong interaction between clients and company with a problem-solution approach. Each new problem entails a specific answer, which is difficult to standardise. Innovation is produced during the contact of the client. Under certain circumstances, it may be co-produced with the client as demonstrated by Gallouj (1996)⁴⁷. The required skills of the personnel are more their ability to find creative solutions than their knowledge and respect of a standard operating procedure. Therefore, the two processes can not be considered as comparable.

This analysis raised a major remark for the definition of service innovation we provided in the previous chapter. Because it has been asserted that the intangible part of the offer are processes, we defined innovation as an intentional change/renewal of the processes. In the case of weak heterogeneity, as in the fourth quarter of the matrix, the identification of the existing processes and therefore of innovation will be easy. However, this recognition of standardised processes will be hardly possible in the case of strong heterogeneity, as in the first quarter of the figure. In this case, the final processes are difficult to forecast due to the variations induced either by the client or by the staff. When the standardised offers are easy to identify, the heterogeneous process will be hard to identify and even to locate in terms of

⁴⁶GRÖNROOS, C., (1985), "Internal marketing, theory and practise", in Bloch, T.M, Upah, G.D, Zeithaml, V.A, eds, *Services marketing in a changing environment*, Chicago, Ill, A.M.A .

⁴⁷GALLOUJ, F., GALLOUJ, C., (1996), *L'innovation dans les services*, Paris, Economica.

launching date. Whereas the former could satisfy the “ intentional ” criteria, the second could be the result of random or unexpected client behaviour and expectations.

The “ intentional ” criteria lead to the separation of the investigations into two research perspectives. The first one will be focused on the way the organisations transform existing and standardised offers. This research will aim at the identification of changes by comparison between the two processes, at the analysis of the methodologies adopted for the design of the new processes and on the examination of the final result. Because the second kind can not rely on the analysis of the processes, we focused our investigations on standardised processes, where the innovation may be simply identified and described.

These analyses lead us to the conclusion that our inquiry will aim at the understanding of the means used in order to renew intentionally standardised interaction processes that deliver value to client. On the contrary of goods, one of their characteristic is that they cannot be separated from the production process.

1.4.4. Inseparability of Production and consumption.

As said before, the deep nature of service activities is to provide “ deeds, processes and performances ”. Most of the time, the servuction process means bringing to the customer utilities rather than objects. The firm’s proposition is not embedded in a material device, which the client can bring with him and use after the delivery. It is made up of the creation of successive stages that are delivered through an interaction process, which require a supportive participation of the client. It involves, as Bowen said (1986)⁴⁸, considering that the client is part of the service firm, part of the service production. The servuction would be impossible without the client’s tacit knowledge of the process. As stated by Zeithaml and Bitner (1996): “Because they participate, customers are indispensable into the production process of service organisations and they can actually control or contribute to their own satisfaction ”.

⁴⁸BOWEN, D.E, (1986), "Managing customers as human resources in service organization", Human Resources Management.

The integration of customers as co-producers of the offer led Mills and Morris (1986)⁴⁹ to use the notion of “partial employees” to express this involvement. Because the process of servuction closely links the client and the personnel, the geographical extent of service delivery obliged most of the firms to create “multiple servuction units”. When production companies use different channels, made up of independent retailers as in franchising systems, service firms are obliged to replicate the servuction process. The exemplary “McDonalds” system is based on the training of the franchisee during a nine month period on the servuction procedures. Then, if the methodologies have been learned, different sites are proposed to the franchisee. Such a training period enables them to standardise products, processes and behaviour and at the end the final result adopted by the client.

In consequence, delivering innovation entails its reproduction over all the different sites. This constitutes a major difference with the products industry. A more complex process must replace the vision of a new product created in one single site and delivered to the client through neutral channels. Each servuction site must adopt the new service. It means that each “adopter” must understand the way procedures are to be settled, must adapt those rules to the site’s specificity, must train the employees so that they understand and learn the change. It means also that the implementation will probably be very sensitive to the employee’s willingness to adopt the change. In this new approach of the innovative phenomenon, organisational factors should be strongly correlated with development speed.

Moreover, the inseparability of production and consumption results in the organisational content of innovation. As said before, the servuction process must be considered as a system in the sense that each subsystem contributes to the final process. Given its inseparability, the change of a part of the process transforms the entire system. This means that for each stage, the internal and external interactions have to be redesigned, the tasks performed by personnel redesigned and that all the co-ordination systems must be recreated. As suggested by Shostack (1987)⁵⁰, any repositioning on either the divergence (uniformity of the process) or complexity (number and intricacy of steps required to perform) will involve redesigning the organisation

⁴⁹MILLS, P.K., MORRIS, J.H., (1986), “Client as partial Employees: Role development in client participation”, *Academy of Management Review*, 11, 4, pp 726-735.

⁵⁰SHOSTACK, G.L., (1987), “Service positioning through Structural Change”, *Journal of Marketing*, January, Vol 51, pp 34-43.

by changing the main steps of the process and by requiring a change in behaviour from the personnel.

As a consequence, we may hypothesise that the research on service innovation must include the nature and extent of the distribution network. In the case of mass markets, involving huge distribution networks, the diffusion criteria may be very different from the ones of business to business activity. When training systems should have a great impact, as in the case of multiple outlets, they could appear as being irrelevant for small-scale diffusion. Similarly, the diffusion of innovation in large networks would entail a strict formalisation of the procedures in order to avoid too much dispersion in the final output. In a single outlet, the innovation may be realised continuously through an Ad Hoc adaptation to the local constraints.

Inseparability suggests that the research on service innovation cannot understand innovation by focusing on the sole processes. Because they result from the interaction client-firms, the way they are produced must be fully integrated to our research. Therefore, we intend to analyse what Eiglier and Langeard (1987)⁵¹ called the servuction systems.

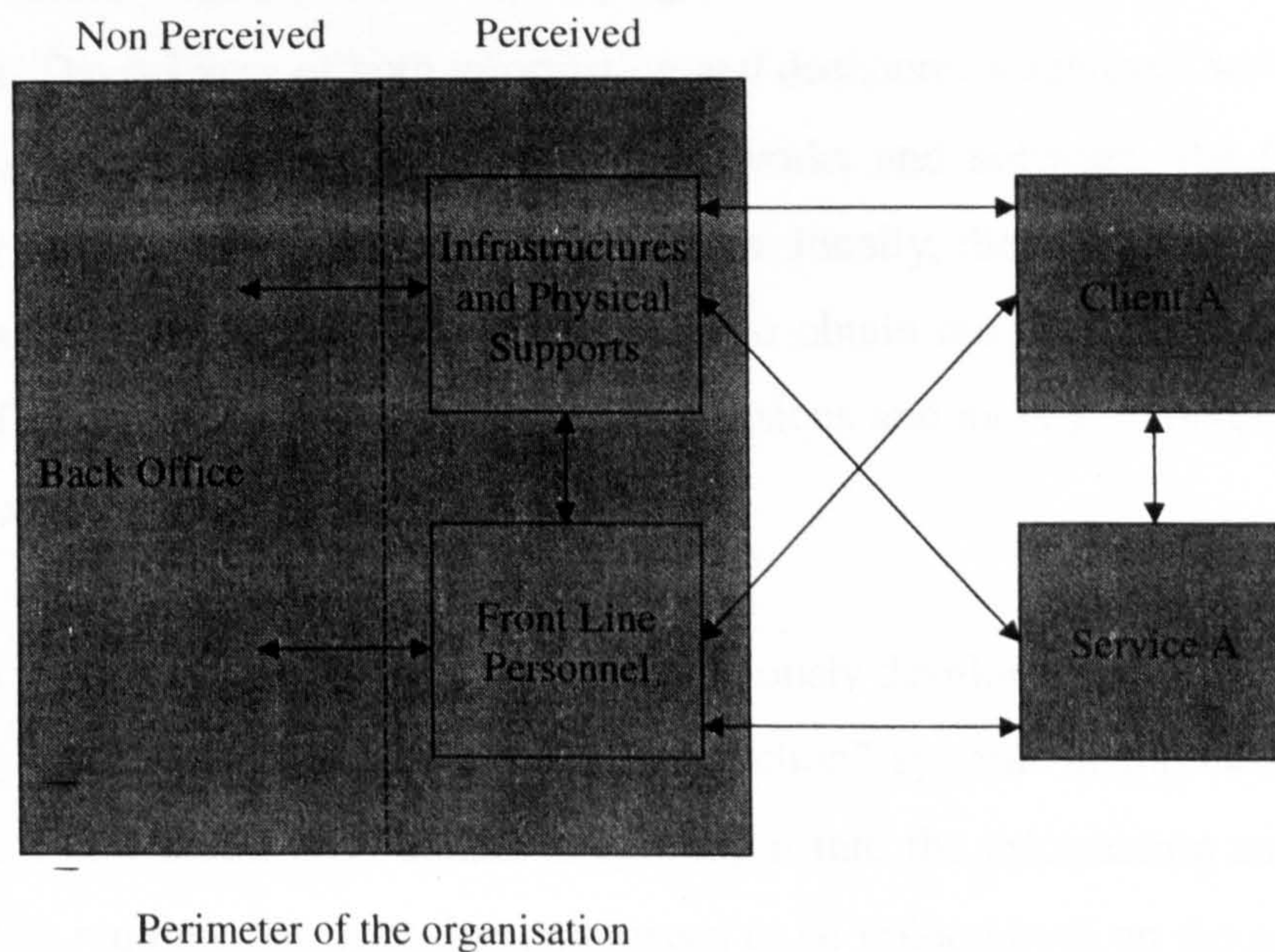
1.4.5 The “Servuction” system.

The central assertion of the authors is that the production of intangible utility requires another frame of analysis. Eiglier and Langeard (1987) proposed a systemic model, called by a neologism "servuction" by analogy with "production". This model, as shown below, consists of the decomposition of service activity into four distinct main components that are partly or totally affected one by the others. Underlining mutual interaction as the basis of the "production" process, Eiglier and Langeard (1987) set up the basis of a systemic approach called "servuction" as follows in figure n°7.

⁵¹ EIGLIER, P., LANGEARD, E., (1987), Servuction, Ediscience International Ed, 6^{ème} Edition

Figure n°7 : The Servuction Model

(Source: Eiglier, P, Langeard, E, 1987)



According to this model, the utility provided by the service is supported by four main components. The back office systems, the front line infrastructure and the front-line personnel will be the means used by the organisation in order to deliver the service. Moreover, the client will also have to produce one part of the benefit by adopting the appropriate behaviour. Those resources are combined in order to deliver the interaction process, the service in our figure, which will provide the final benefit to the client. The authors substituted the neologism “servuction” for the word “production” in order to emphasise that the final output is not a product but an intangible benefit delivered to the client through a “servuction” system.

Eiglier and Langeard (1987) underlined that, as opposed to the production system, each part of it interacts with the other parts. The underpinnings of the model are that a systemic approach is necessary either to understand and conceive or to manage service innovations. This means that if some factors of success rely on the adequate management of each part of the system, critical factors of success and failure also lie in the mastering of the interactions of each part of the system.

The example of a banking outlet could illustrate this analysis. During his visit to an agency, the client will interact successively with the infrastructures, such as the front door, the design of the interior, the personnel's offices and even the cash dispensers. Moreover, he will also have to interact with the front line employees when they are required to perform specific operations. The delivery of both information and decisions is achieved with the support of the back-office means such as the computer networks and software, the formalised decision process or the purchasing of monetary resources. Finally, the client must produce one part of the process by using cash dispensers in order to obtain money or information related to his account. The utility delivered, information, decisions and money involves the participation of the entire system, which also includes the client.

Given the assumption of the inseparability previously developed, creating new benefits means modifying the system that supports the "servuction" system. In the examples listed above, delivering a new credit offer entails integrating it into the information and decision systems. Moreover, it requires the front-line employees to be trained both on the new offer and on the back office procedure in order to deliver it to the client. Finally, the selling of this offer may require confidentiality in order to secure the customers. Thus, the choice of the appropriate infrastructure, a private office, could be required as a full ingredient of the offer.

The adoption of the servuction concept means that the innovation may rely on one or many of the components. For instance, it has been observed by Bourgeois and Jallat (1994)⁵² that the change of the surroundings are one way used to renew the existing processes or to create entirely new services. Their case study described the way Accor created a new concept of discount hotels named "Formule 1". After the successful test of two sites, between 1985 and 1986, more than 250 hotels were opened and international development began after 1993. This success relied on the creation of an entirely new standardised building which satisfied customer expectations and personnel productivity. The use of computerised systems for the reception desk enabled them to decrease personnel costs. The removal of the restaurant generally associated with the hotel enabled them to increase productivity. A special arrangement of the rooms was selected in order to standardise the building of the main

⁵²JALLAT, F., BOURGOIS, J.F., (1994), " Histoire d'une innovation réussie: le lancement de Formule 1 ", Décisions Marketing, n°2, Mai-Aout, pp 31-35.

components of the hotel. The creation of a new service was in this case supported by a radical change in the physical evidence.

More broadly, M.J. Bitner (1992)⁵³ underlined the strong influence of supportive infrastructures: *"Similarly on the consumer side, variables as pricing, advertising, added features and special promotions are given much more attention than the physical settings as ways in which customers can be attracted to and/or satisfied by firm's services.The position advanced here is that the physical surroundings are, in general, more important in service settings because customers as well as employees often experience the firm's facility. "* As studied by Zeithmal and Bitner (1996), the physical evidence includes the exterior facilities (such as the buildings, car-parks and exterior design), the interior facilities (such as the equipment, interior design and signage), and other tangibles (such as the business cards, billing statements and employee dress). Because of the simultaneity of production and consumption, consumers and personnel are both "in the factory". The physical evidence is influencing cognitive, emotional and physiological responses. Many research has reported on the influence of physical surroundings on the behaviour and the image for services such as banks, hotels and restaurants, retail stores and hospitals (Baker 1987, Bitner 1986, Shostack 1977, Upah and Fulton 1985, Zeithaml Parasuraman and Berry 1985)⁵⁴.

The servuction model provide a good understanding of the system which supports the delivery of the intangible part of the client's utility. It orientates our investigations to service innovation by providing the scope of our research. Understanding the change in the intangible part of the delivery processes means understanding the change in the system which supports them. Thus we intend to refine the scope of our research.

⁵³BITNER, M.J., (1992), " The impact of physical surroundings on customers and employees ", *Journal of Marketing*, Vol 56, April, pp 57-71.

⁵⁴Quoted in the J Bitner's Article:

BARKER, J., (1987), " The role of environnement in marketing services: The consumer perspective ", in *The service Challenge: integrating for competitive advantage*, J.A. Czepiel, C.A. Congram and J.Shanahan, eds American Marketing Association, pp 79-84.

BITNER, M.J., (1986), " Consumer response to the physical environmental in service settings ", in *Creativity in Services Marketing*, M Venkatesan, D.M. Schmalensee, C Marshall eds, American Marketing Association, pp 89-93.

UPAH, G.D., FULTON, J.N., (1985), " Situation Creation in Services Marketing ", in *The service encounter*, J. Czepiel, M Solomon and C Surprenant, Eds Lexington, pp 255-264.

1.5. CONCLUSION ON THE POTENTIAL FIELD OF RESEARCH: INTEREST OF THE SUPPLY-SIDE PERSPECTIVE.

The review of the theory on service characteristics provided an opportunity to refine the scope and purpose of the research on service innovation. It revealed that the service sectors and offers may be very different and complex. This offers four broad perspectives for the research:

- The first one will focus on the client himself. Given the characteristics of service offers, it may be hypothesised that client's attitude and behaviours may differ than for the products on many dimensions. While for products the client is not likely to co-produce the offer, the development of new services entails developing new behaviours while having no preliminary idea of what could be
 - the offer. The way consumers manage this paradox deserve further research.
 - Similarly, the purchasing of a new offer entails making a preliminary assessment of the benefits that could be expected. In the case of intangible offers, this could be problematic. How the customer create a first assessment of the offers is also a topic that must be investigated. This broad area could be called the demand-side perspective.
- The second topic is linked to the way companies develop new services. From this perspective, the inseparability raises major questions. Simultaneous production and consumption of offers means that the development cannot rely on specialised R&D departments organised as for products. At least, if they exist, they must be closely linked to the delivery system. Moreover, the development process should be different due to the fact that the content of the offer is different. Thus the development means and methods used by companies to design the offers represent the supply-side of research on service innovation.
- The third topic is closely linked to the management of the technologies. Over the past years, the service companies invested a lot in new technologies related to the information systems but also linked to the infrastructures (see Gallouj and Gallouj 1996; Jallat 1992). It is admitted that the adoption of technologies

constitutes one way to innovate products. Barras (1986, 1990)⁵⁵ demonstrated that the innovation cycle in services is different. The adoption of new technologies is done initially in order to decrease production costs and not for innovating. Then, once technologies has been adopted, they begin to be used as a means to create new offers. Thus, technology doesn't seem to play a similar role as for products. Investigating the way companies manage technologies and use them in order to innovate constitutes the technological-side of innovation.

- The last flow of research in service innovation is linked to the economic perspective. The service sectors have been a major contributor to the economic development over the past thirty years. Is this development linked to the innovative behaviours of companies? And if so, what kind of effects could be
 - expected from investments in innovation within one or many sectors?
 - Similarly, as the services are difficult to protect given their intangibility, what could be the macro effects of the innovation. This perspective adopted a macro level for understanding the effects and influence of service innovation.

Being at the beginning of the investigation on service innovation is both stimulating and demanding. This research adopted the supply-side perspective. The reasons of this choice are summarised in the statements in figure n°8. Though good reasons also exist to cover the other fields, it must be noticed that a great deal of research has been produced to understand new product development, very few studies exist in the field of services.

First, we observed that service innovation aims at the creation or improvement of the client's

⁵⁵ Barras, R., (1986), "Towards a theory of Innovation in Services", Research Policy, Vol 15.
Barras, R., (1990), "Interactive innovation in financial and Business Services: the Vanguard of the Service Revolution", Research Policy, Vol 19.

Figure n° 8 : Conclusion four our research on Service Innovation

Main Statement	Involvement for our Research
<p>The “servuction system” supports the intangible system.</p>	<p>Given inseparability, a change in process innovation entails a change in the “servuction system”. As a consequence, the organisation has account in the result, which will impact on the organisational features.</p> <p>As previous research not investigated this side of services, this research is focused on the identification of relevant models for describing and explaining the way organisations design and produce new offers to the clients.</p>
<p>Renewal of the service offer entail a change either in the processes of delivery and/or in the tangible items delivered.</p> <p>—</p> <p>—</p>	<p>Two distinct corpus of research should be considered: One is the interaction process approach, the other is the creation of new products. Given the amount of literature on product innovation, this research will focus on the innovation resulting from the transformation of the interaction process.</p> <p>Thus, the major concern of this research is to identify the way organisations design and produce new offers to clients by the renewal of the interaction processes.</p>
<p>Services are heterogeneous and perishable. The personnel-client interaction may be standardised or customised.</p>	<p>Two distinct innovative processes have to be distinguished according to their standardisation degree. Standardised processes make it easier, even possible, to build an identification and a rational analysis of changes.</p> <p>This research will focus on the design and implementation of standardised processes.</p>
<p>Inseparability of Production and Consumption</p>	<p>Each distribution outlet produces and delivers the offer. The diffusion process (bottom-up and top-down) should be investigated as potential key factors in the design and diffusion of the intangible processes.</p> <p>The investigations must encompass the diffusion and implementation of the innovation as well as the design of the interaction process itself.</p>

utility. This purpose is achieved through the delivery of tangible goods but also, and sometime separately, through the delivery of intangibles processes. Because a whole stream of research

has already investigated the development of the tangibles, as we will review in the second part of this chapter, we will focus our research on the intangible part of the service offer. **This part is defined as being the interaction process between the client and the organisation. Our questioning will aim at identifying the ways the firms use in order to renew their interaction processes with the client.** Then, what we will call in further developments “service innovation” will refer to the intangible processes that are directly linked to the delivery of value to the clients.

Secondly, because of the potential heterogeneity of the service processes, the identification of the innovation may be achieved only in some contexts. **Therefore, research on service innovation must select the innovation projects according to their degree of standardisation.** They must be easy to identify in order to achieve stable results. The birth of the new process must be possible to identify clearly so it should be possible to track the main events of the development. In this case, it will also be possible to establish the contribution of different departments in the results and therefore to build the managerial process which leads to the final output. uch processes offer the possibility of matching different offers. The new processes will be compared with the existing ones. They could also be compared to the competitor’s offers. This choice means that we will not take into account the Ad Hoc processes, like some consultant offers, where the commercial proposition differ from one client to another. On the other hand, processes that are not divergent, in the sense given by Shostack (1987), could be integrated into our investigations.

Thirdly, the servuction model emphasised that the creation of new interaction processes must be supported by the servuction components. This inseparability suggests that it is impossible to split the analysis of innovation as being the final artefact from the way it is produced. Compared with physical goods, where the creation of new offers may be conceived independently from the production and the consumption process, the creation of new processes should integrate the way services are produced. This constitutes a major change compared with the innovation frameworks developed on products. Very early, the litterature in product innovation distinguishes the product and the process as being two separate fields. Abernathy and Utterback (1978)⁵⁶ asserted that, during corporate history, the innovation rates

⁵⁶ ABERNATHY, W.J., UTTERBACK, J.M., (1978), "patterns of industrial innovation", Technology Review,

are dissimilar for product and process. Wheelwright and Clark (1992)⁵⁷ formalised this assumption by separating the innovative projects into two dimensions: the importance of the product's change and the degree of the production process change. The inseparability criteria mean that such distinction for service innovation could lead to wrong conceptualisation of the development process.

The major consequence of inseparability, is that the research on the development process must include the way the final result is delivered. One cannot extract a final result from the organisation that supports it. As a result, the research should focus on the organisational factors that are linked to the change in the interaction processes. The nature of the organisational factors supporting or preventing innovation has to be investigated. Similarly, the reasons for influence has to be explained. In return, the effect of innovation on the organisational features will be included in the scope of our research. This means that the scope of this research is very much focused on the organisation itself. The emphasis will be put more on the supply side than on the demand side.

The inseparability suggests also that the extension of the offer on a large scale requires reproducing the delivery within a distribution network made up of multiple outlets. This extension raises many questions related to the diffusion of intangible processes. How is it possible to reproduce similar processes when each of the actors involved in the servuction system may have different perceptions and knowledge of the service? In return, how the local actors, acting in their outlet, may influence the entire network to the point that it may adopt the local innovation? These questions among others underlined the importance of the distribution network on the innovation process. **Thus, in order to produce comparable results, it would be fruitful to separate the sectors developing the offers through a single delivery point from the sectors that deliver the offer through a large distribution network.**

This initial analysis of the service literature led to a preliminary definition of the scope of the research. Given the definitions that could be provided we intend now to review the literature

80, pp 41-47

⁵⁷ CLARK, J., WHEELWRIGHT, S.C., *Revolutionizing Product Development*, New York, Free Press, p 93

which has focused on service innovation and to match the results with the aims presented in this first part.

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2. LITERATURE ON NEW SERVICE DEVELOPMENT

Compared to product innovation, literature on new service development remains scarce and mainly focused on the financial sector. The recent literature review conducted by A. John and C. Storey (1998)⁵⁸ quoted only 53 significant papers, written between 1981 and 1998. Thirty one of them have been selected, according to the existence of empirical investigations. We added other research, also selected according to the criteria of their empirical assessments, either qualitative or quantitative. Most of the works concentrated on identification of the success and failure criteria during innovation. Only five papers concentrated on a detailed analysis of what happened during the development process through a qualitative approach, the other having adopted quantitative methodologies. These papers and work are summarised in annexe n°1.

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Many statements ensued from this work: the methodological choices, the success and failure perspective, the analysis of the development process, and finally the initial investigations into the organisational aspects of service innovation. We will introduce these different approaches and will conclude on the lack of theoretical framework that could explain the initial observations.

Two major themes arise from the research already carried out NSD (New Service Development):

- 1- The research of success and failure factors
- 2- The identification of the development process.

When the analysis on NSD converges with similar statements, the identification of success and failure factors leads to divergent, contradictory conclusions. We intend to develop these two streams and to summarise their major conclusions.

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⁵⁸ JOHNE, A., STOREY, C., (1998), "New Service Development: A Review of the Literature and Annotated Bibliography, European Journal of Marketing, Vol 32, n°3-4, pp 184-251.

2.1. THE RESEARCH ON THE SUCCESS AND FAILURE FACTORS.

Given the little research done on service innovation, many authors led their initial investigations by focusing on the identification of the success and failure criteria. This situation induced a strong temptation to quickly identify the critical factors supporting or preventing innovation. We intend to review the main results and findings and then to detail the limits of these approaches. Comparing dissimilar research may lead to a confusing image of what has been produced. To avoid this trap in this synthesis we intent to regroup the different conclusions according to the methodologies that have been used.

2.1.1. Main quantitative results and findings of success and failure criteria.

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The first stream of research aimed at the identification of success and failure factors by the use of quantitative methodologies. The work of Cooper, Easingwood, Edgett, Kleinschmid and Storey (1994)⁵⁹ was a good example of the use of this methodology. It was based on the sending of 173 questionnaires to managers in a position to contribute to the launching of new services. The respondents were asked to rate the innovation on fourteen performance criteria such as sales and profitability but also the customer relationship enhancement. Then, they had to evaluate the contribution and impact of no less than 104 independent variables: 24 of them measured the corporate environment, 20 measured the new product process, 17 measured the nature of the market place, 15 measured the product advantage and 28 measured the launch itself. Finally, the authors compared the results with previous research on both products and service innovation.

Further quantitative analysis was used in order to eliminate co-variant factors. The performance criteria were reduced from fourteen to only three factors. The financial performance included the profitability, sales, sales growth and market share. The relationship enhancement referred to the customer loyalty and the image enhanced. The market

⁵⁹ EASINGWOOD, C.J., STOREY, C., (1991), " Success factors for new consumer financial services ", International Journal of Bank Marketing, Vol 9, n°1, p3-10
EASINGWOOD, C.J., STOREY, C., (1995), " Determinants of new product performance: a study in the financial services sectors ", International Journal of Service Industry Management, Vol 7, n°1, p 32-55.

development connoted the degree to which the new products opened-up new opportunity in terms of new customers and new markets.

When they investigated the success and failure factors, many authors implemented similar methodology. This was the case of Easingwood and Storey (1991, 1995), De Brentani (1989, 1991, 1993)⁶⁰, Thwaites (1992)⁶¹, Martin and Horne (1993)⁶², Edgett and Parkinson (1994)⁶³ and Atuahene-Gima (1996)⁶⁴. In all these cases, the quantitative investigations provided robust results, strongly backed by well-known methodologies. Thus, the statement of a small number of convergent conclusions requires further examination.

Six key factors appeared to determine the performance of the new services in the Cooper, Easingwood, Edgett, Kleinschmid and Storey (1994)⁶⁵ article. First, the “market-driven new product process” means that a well-planned and executed development is correlated to success. Thus the clear focus on customer needs, wants and buying behaviour and as a consequence on the investment in market research is bound to facilitate the potential successes. Not surprisingly, the second criterion is linked to the efficiency of a customer service. A friendly, courteous, prompt customer service is described as being a success factor. Equally focused on the customer aspects, the third criterion, the “effective marketing communication”, underlined the importance of the means devoted to increasing the client’s awareness and to acquire unique positioning.

⁶⁰ DE BRENTANI, U., (1989), “Success and failure in new industrial services”, *Journal of product innovation management*, Vol 6, décembre, p 239-258.

DE BRENTANI, U., (1991), “Success factors in developing new business services”, *European Journal Of Marketing*, Vol 25 n°2, p 35-59.

DE BRENTANI, U., (1993), “The New product process in financial services: strategy for success”, *International Journal of Bank Marketing*, Vol 11, n°3, p 15-22.

⁶¹ THWAITES, D., (1992), “Organisational influences on the new product development process in financial services”, *Journal of Product Innovation Management*, Vol 9, p 303-313.

⁶² MARTIN, C.R., HORNE, D.A., (1993), “Service innovation: successful versus unsuccessful firms”, *International Journal of Service Industry Management*, Vol 4, p 48-64.

MARTIN, C.R., HORNE, D.A., (1995), “Level of success inputs for service innovations in the same firms”, *International Journal of Service Industry Management*, Vol 6, p 40-56.

⁶³ EDGETT, S., PARKINSON, S., (1994), “The development of new financial services: identifying determinants of success and failure”, *International Journal of Service Industry Management*, Vol 5, n°4, p 24-38.

⁶⁴ ATUAHENE-GIMA, K., (1996), “Differential potency of factors affecting innovation performance in manufacturing and services firms in Australia”, *Journal of Product Innovation Management*, Vol 13, p 35-52.

ATUAHENE-GIMA, K., (1996), “Market Orientation and Innovation”, *Journal of Business Research*, Vol 35, p 93-103.

⁶⁵ COOPER, R.G., EASINGWOOD, C.J., EDGETT, S., KLEINSCHMID, E.J., STOREY, C., (1994), “What distinguishes the top performing new products in financial services”, *Journal of product innovation management*, Vol 11, 4, p 281-299.

To these three criteria linked to the customer perceptions, the authors found that internal criteria are equally important. The fourth criterion provided the most important contribution into the explanation of the final success: “the top financial performers among new services products featured a strong fit between the needs of the new product and the company in terms of marketing resources and expertise, advertising and promotion expertise and resources, and salesforce/distribution resources and expertise”. To the statement of the importance of the “marketing synergy”, the authors added that the “managerial and financial synergy” contributed greatly to the success of the innovative projects. In a very similar way, the fit between the needs of the project and both management and financial resources was correlated to the result to a great extent. Finally, the “launch preparation” constituted the sixth success criterion. It included many actions such the understanding and support of the staff, the marketing skills and knowledge of the sales people and the training of those people. This last variable suggested that the internal marketing of the project is bound to support its development.

Surprisingly, the comparisons made with similar research on new manufactured products revealed strong differences as described by the authors in the following figure n°9. One of the major differences lies in the small importance of service design to the final success. It does not provide a sustainable competitive advantage. The authors suggested that three main hypotheses could explain these differences. First, the services are intangibles. Because it is impossible to see the product and to touch it, the marketing communication and the customer contact people are playing a greater role in customer assessment. Second, it is easier, cheaper and quicker for a competitor to copy services than products, which are easier to protect. Third, it is difficult to achieve large product differentiation for financial services. As stated by one respondent quoted in the article: “a loan is a loan is a loan. There may be some new twists and wrinkles, but it’s still a loan – and it’s been around for hundreds of years!”.

Figure n°9: Comparative Results: Manufactured Products versus Current Study

(Source COOPER, R.G., EASINGWOOD, C.J., EDGETT, S., KLEINSCHMID, E.J., STOREY, C.,(1994), “ What distinguishes the top performing new products in financial services ”, Op Cit)

Success Vs Failure Factors for New Manufactured Products.	Financial Performance Success Factors (the Current Study on Financial Service).
Managerial/Marketing Synergy	Marketing Synergy
Technological Synergy	Managerial/Financial Synergy
Market Attractiveness	Not Found
Product Advantage	Not Found
Strong Marketing Orientation	Launch preparation Marketing Communications Customer Service
Quality of Execution	A Market Driven new Product Process

Similarly, De Brentani (1989, 1991, 1993) defined her investigations as follows: "What underlying composite dimensions or factors describe new service projects? Which of the descriptive factors are related to each measure of new service success/failure? How are the findings relevant for managers in successfully developing new business services? ". In order to provide answer to these questions, the author built a sample of 184 companies. One major difference with the previous research was to include twelve different sectors in the sample, whereas Cooper, Easingwood, Edgett, Kleinschmid and Storey (1994) selected their companies according to their belonging to the financial sector. She sent a questionnaire to managers asking them to assess the results of one success and one failure within the same company. Then the respondents had to assess the two projects based on the 75 initial variables.

The results revealed similar answers in the way service companies measure the performance of new services. Four main dimensions emerged from the quantitative analysis. Sales performance includes the following assertion: “exceeded market share objectives, exceeds sales/customer use growth objectives, high overall profitability, and positive impact on corporate image/reputation”. The competitive performance is achieved when: “the buyer perceives superior services outcome, the service gives the firm a competitive advantage”. The cost performance is measured through variables such as: “performs below the expected costs, achieves important cost efficiencies for firms”. The “other boosters” include: “enhances

sales/clients use of firm's other products/services and enhances profitability of firm's other products/services".

Correlated to those outcomes, seventeen independent factors may be classified into four broad categories: proficiency in new services development, project synergy, market characteristics and finally the nature of the service offering. Some of these variables like market potential, corporate synergy, implementation of formal development and the launch process has already been identified by the researcher as significant indicators that lead to new products success. Amongst all of them, De Brentani (1991) emphasised the importance of Project Synergy with company skills, but also with the existing range of offers. As an example, she argues that the Overall Corporate Synergy, that fits innovation projects with the existing set of images and known skills of the firm, enable the consumer to identify, evaluate, and differentiate from competing services. Edgett and Parkinson (1994) reinforced the importance of the central role of intra-organisational involvement and integration among departments. Martin and Horne (1993) reinforced this conclusion by doing similar observations based on a quantitative survey. Further investigations, conducted within the companies reinforced this first perception of the success and failure factors.

These statements led to consider newness and N.S.D. process in the perspective of their link with what already exist in companies. The firms that develop new services closely adapted to their current offer's portfolio are due to perform better than the others. Newness must be considered as the continuity of the past propositions and positioning. As a consequence, the range extension or modifications of existing offers are more likely of success. The policy of new service, which provides quality evidences to help the buyer to evaluate the offer, are said to have a significantly greater chance to succeed. Moreover, the results revealed the necessity of product-market fit. Not surprisingly, the firms that establish in depth knowledge of their customers but also of their competitors are bound to have faster response to a changing environment. Service companies should be market driven.

This last conclusion could be considered as a poor result. What could be said about research that concludes to the opposite? Would it be possible to contradict such an obvious assertion? This is unfortunately the case. De Brentani's results, consistent with those of Cooper, Easingwood, Edgett, Kleinschmid and Storey (1994) and the overall opinions developed in

quantitative and qualitative survey, present many limits directly or indirectly linked with further observations of innovative firms.

2.1.2. Limits of quantitative research

The assertion of the market driven condition does not fit with the observations. Davidson, Watkins and Wright (1989)⁶⁶ observed that, in a sample of 84 financial institutions, no market tests were systematically carried out. Based on a quantitative survey of 67 companies, Edgett (1993, 1996)⁶⁷ revealed that formal development processes and market assessments are used by only a small proportion of the companies interviewed. Salleh and Easingwood (1993)⁶⁸ estimate this proportion to be a small 18% of the cases ! As stated by Cooper, Easingwood, Edgett, Kleinschmid and Storey (1994): “We rate a market-driven new process as the dominant success ingredient for top-performing new service products. What was disheartening in the results, however, was how weak this factor was for too many projects”. These observations contradict the importance of the market-driven condition. On the one hand, it is said that the attention devoted to clients reduces the failure rates. However, on the other hand, only a small proportion of firms actually implemented consumer surveys. Given the number of repeated observations, one can conclude in the consistency of the results. Because this contradiction is not explained by any of the authors who revealed it, many factors may be suggested.

First most research does not pay attention to the nature and content of innovation. It lets the respondents define the kind of innovation project they selected. Whatever the content, incremental or radical, process or product, innovation is considered within a sole category. Similarly, the research of De Brentani (1989) crossed diverse sectors such as the insurance, banking, consulting and shipping. Similarly, the authors do not include in their sample the control of the size of the organisations. The underpinnings of these choices are that the firms

⁶⁶ DAVIDSON, H., WATKINS, T., WRIGHT, M., (1989), “ Developing new personal financial products: some evidence of the role of market research ”, *International Journal of Bank Marketing*, Vol 7, n°1, pp 8-15.

⁶⁷ EDGETT, S.,(1993), “ Developping new financial services within U.K. buildings societies ”, *International Journal of Bank Marketing*, Vol 11, n°3, p 35-43.

EDGETT, S., (1996), “ The new product development process for commercial financial services ”, *Industrial marketing management*, Vol 25, p 507-515.

⁶⁸ SALLEH, EASINGWOOD, (1993), “Why European Financial Institutions do not test market new consumer

give to innovation the same strategic intents and the same managerial content. Far from being confirmed, such an assertion would signify that both small and large organisations behave similarly during innovation. It suggested also that the sectorial environment has no influence on the selection of development methodologies. Firms delivering their offers through large distribution networks would behave in the same way as those that adopted small or direct distribution. This lack of definition may blur the results to a great extent and therefore explain the contradictions. The inter-sectorial approach, but also the effects of size and of the nature of the service remain to be fully explored.

Second, the contradictory results may be explained by the multiple factors used in order to gauge success and failure. The main approaches developed in the research are sales, growth, market share, return on investment, profitability and internal acceptance. Martin and Horne (1993) underlined the diversity of the approaches by saying that some firms use financial measures while others focus on the measures of customer satisfaction. Though the research identified the main dimensions, it did not define the combination of the criteria adopted by the managers. It may be hypothesised that the assessment of a new service may be carried out on different variables according to whether the situation is of leadership or follower on the market. Similarly, it could be expected that stronger investment and therefore a decrease in profitability could contribute to the achievement of a market share objective. Because it may be hypothesised that the assessment of the potential results orientated the selection of new ideas, of new concepts and of the interpretation of the consumer's tests, the single correlation between the assessment of success and failure and the final result may appear more complicated than expected. As a consequence, research that compares many development projects having many and diverging purposes should pay attention to the efficiency of the results in diverse and complex environments.

Third, the selection of the variables expected to have an influence on the result may constitute an important bias in the conclusions. On the one hand, the methodologies used in quantitative research included a preliminary set of qualitative interview aimed at the identification of those variables by questioning the managers. But on the other hand, given the huge numbers of variables, 75 in the case of De Brentani's research, 104 in that of Cooper and Al research

(1994), it is difficult to consider that any hidden factors contribute to the final variance. The example of the degree of newness could illustrate this point.

Innovation refers to something “new”. Rather than having an absolute definition of newness, all the authors admitted that this concept is related to the actors. As stated by Rogers and Shoemaker (1971)⁶⁹: “it matters little, as far as the human behaviour is concerned, whether or not an idea is “objectively” new as measured by the lapse of time since its first use or discovery.....if the idea seems new and different to the individual, it is an innovation.”. This idea was developed by Booz, Allen and Hamilton (1982)⁷⁰ who suggested that new products may be classified according to their newness to the company and to the markets. “New-to-the-world” products, as may be the Walkman or the Post It, created an entirely new market and required the firm to design an entirely new know-how. However, when the firm launches substitute products, designed to increase profitability, it will reduce the newness on both markets and production. This “cost reduction” category means that the firm innovated, but to a short extent.

This taxonomy of innovation established that it is impossible to compare all innovation indifferently. Cooper (1993)⁷¹ reported that the level of success and failure is different according to the degree of newness. When highly innovative projects (new to the market and to the firm), and low innovative ones (low newness for markets and low newness to companies) achieved on average a good return on investment, the moderate innovativeness projects failed more often and achieved a lower performance. As the author said: “the success rates and new product performance do depend on the product type or newness of the product”. This assumption revealed that the research on innovation must concentrate on the degree of innovativeness as a variable, each time that a comparison is made directly or indirectly between many projects.

This statement invalidated most of the quantitative research we reviewed on service innovation. We reported previously the research of Easingwood and Storey (1991, 1995), De

⁶⁹ ROGERS, E., SHOEMAKER, R., (1972), *Communication of Innovations*, Free Press, New York.

⁷⁰ BOOZ, ALLEN, HAMILTON, (1982), *New product management for the 1980's*, New York, Booz, Allen and Hamilton.

⁷¹ COOPER, R.G., (1993), *Winning at new products: Accelerating the Process from Idea to Launch*, London, Addison Wesley, 2nd Edition.

Brentani (1989, 1991, 1993), Thwaites (1992), Martin and Horne (1993), Edgett and Parkinson (1994) and Atuahene-Gima (1996). Aiming at the identification of the success and failure criteria for new service development, they tried to identify the variables related to the successful projects. The statement of Cooper (1982) on the influence of the newness on success should have led to the design of samples, according to the nature of the innovative project. This was not the case. None of these works integrated this variable into the research design. Thus, the high innovative projects are compared with moderate and low innovations. In the case of the quantitative research produced for the service innovation, none of these factors has been explicitly mentioned. This lack may be due to the complexity of the listing of all the success criteria potentially linked to innovation. On the other hand, it may be due to the managers who do not necessarily perceive all the variables that could induce success.

This debate on the identification of success and failure factors may lead to the conclusion that any repeated results has been produced. **It must be observed that the only assertion that is observed by multiple surveys is the one linked to the way new services are developed. The way firms organise the development process is clearly identified as a success factor.** Choices like: who was involved, how did the different departments to co-ordinate their efforts, which kind of development stages were identified, seemed to have a determinant role in the final success. This statement opened a way for research that could aim at providing further insights on the development process. Though very few works may be observed, qualitative research originally provided investigation in this field.

2.1.3. Main qualitative results and findings of success and failure criteria.

Compared with the quantitative research, the qualitative approach is made up of a small sample of five case studies, developed in short papers providing more of a synthesis of the observations rather than extensive results. These case studies, done in service activities such as banking or distribution, emphasised the organisational component of innovation. The initial research of Scarborough and Lannon (1989)⁷² was conducted in the banking sector. The authors asserted that to exploit the potential of Information Technologies in innovation, the

⁷² SCARBOROUGH, H., LANNON, R., (1989), " The management of innovation in the financial service sector:

managers had to overcome the structural inertia rooted in the internal political forces. Their observations revealed that the firm's organisation by function prevented strategic innovation. By doing so, the authors established an initial link between innovation capacity and organisational features for services.

Analysing case of success in the financial service industry, Edgett and Jones (1991)⁷³ underlined that success is, above all, due to organisational skills. In their description, "The National and Provincial Building Society" company (N & P), stressed by a harder competitive environment, decided to restructure their network into four regions and to re-organise this activity into four separate main divisions. Then the creation of a strong marketing department enabled them to initiate more development than before. Furthermore, the product manager's methodology involved submitting a business plan to approximately twelve people of various departments. As quoted by the authors describing this procedure: "no precedent existed to gain the approval and the co-operation of other departments". It seems that new services are above all the result of co-operation rather than the result of a "champion" talent, even if a champion formally drives the process. As an example Edgett and Jones (1991) considered both the high commitment of senior managers and the high level of personal contact maintained by the product manager all along the project as being factors of success.

Hart and Service (1993)⁷⁴ made the same statement concerning organisational skills. By carrying out "action research" in a firm distributing electromechanical and electronic components, they established that a change in the organisation was necessary to develop a shorter development process successfully. As a matter of fact, considering sequential N.S.D used by this firm before they changed it, they reported how communication problems and divergent long term visions between the different departments (marketing, purchasing, laboratory and packaging) induced serious delays in the launching schedule. Efficient N.S.D process relies on a "functional integrative perspective", setting up a less formal but more communicant organisation, improving shared information, decision making agreement and decision making authority agreement. A similar statement was made by Edvardsson and

a case study ", Journal of Marketing Management, Vol 5, n°1, p 51-62

⁷³ EDGETT, S., JONES, S., (1991), "New product development in the financial service industry: a case study", Journal of Marketing Management, Vol 7, pp 271-284.

⁷⁴ HART, S.J., SERVICE, L.M., (1993), "Cross Functional integration in the new product introduction process: an application of action science in service", Journal of Service Management, Vol 4, n°3.

Haglund (1995)⁷⁵. Their observations revealed that the lack of co-ordination between the functions, the intra-organisational conflicts and the integration among departments may have a major influence on the creation, design and launching of new services.

Such statements opened the way for an analysis based on the description of social networks, able to induce either failure or success. The organisational change induced by innovation is underlined by A. Raesfeld Meijer, K. de Ruyter and P Cabo (1996)⁷⁶. Basing their theoretical framework on the previous results of Weick (1979), they developed their research by focusing on the communication patterns between the participants: "We investigated social dynamics by means of two output variables of technological co-operation, namely, cognitive similarity and communication frequency". According to this choice, they measured and compared the intensity in communication and shared perceptions between the team members before the start of one innovative project and after its implementation. They stated a deep change in the information flow exchanged between the people. The project resulted in the transformation of the nature of information exchanged between people. Moreover, the frequency of communication was dramatically altered to the point that some of the actors were excluded from the new communication network. This resulted in divergent perceptions of what must be done by the organisation. In this case study, the launch failed. One of the main explanations was that the firm produced a poor result at the end. Because one of the two actors excluded should have contributed to a central part of the delivery process, the firm produced very poor delivery: "According to our model, stimulating communication would have been a more appropriate management option. In a situation which tends to disintegration, it is rather difficult to reach shared meaning if shared action has not been established yet."

The central role of the communication amongst the members of the development project is well demonstrated by Lievens and Moenaert (2000)⁷⁷. In a quantitative survey, they

⁷⁵ EDVARSSON, B., HAGLUND, L., MATTSON, J., (1995), "Analysing, planning, improvisation and control in the development process of new services", *International Journal of Service Industry Management*, Vol 6, n°2, p 24-35.

⁷⁶ Von RAESFELD MEIJER, A., de RUYTER, K., CABO, P., (1996), "Cooperation in new service development: a social dynamic approach", *Advances in Service Marketing and Management*, JAI Press Inc, Volume 5, pp 193-214.

⁷⁷ Lievens, A., Moenaert, R.K., (2000), "Project team communication in Financial Service innovation", *Journal of Management Studies*, Vol 37, n°5, pp 733-766.

Lievens, A., Moenaert, R.K., (2000), "New service team as information processing systems: reducing Innovating Uncertainty", *Journal of Service Research*, Vol 3, n°1, pp 46-65.

demonstrated that the communication of the staff within development teams accounted greatly for the final success in the delivery of new services.

In the research previously outlined, organisational change is yet again identified as being constitutive in the innovative service process. It also provided an important contribution on the nature of the success factors linked to the organisation. The sharing of a convergent meaning between the actors of the project obtained by the use of a strong inter-personal communication had an impact on the result. If the social network does not support communication, then the building of shared sense will be impossible to achieve. Co-ordinating actions requires a “collective mind” as asserted by Weick (1993)⁷⁸: “Actors in the system construct their actions (contributions), understanding that the system consists of connected actions by themselves and others (representation) and interrelate their actions with the system_ (subordination).....As heedful interrelating and mindful comprehension increases, organisational errors decrease”.

It can be concluded from the qualitative part of the research that the overall organisation of the development process has an influence on the final launching of new services. Due to the inseparability, the launching of new offers entails adapting the organisation and establishing new kinds of co-ordinated efforts. This seems to be obtained by overcoming the political forces that could lead to resistance to change, by establishing strong communication flows that could establish convergent meaning, and by working on the project in a way that permits the functional integration perspective. All those observations lead to the conclusion that research on service innovation could greatly benefit from a focus on the way organisation produce new offers. This is what is called the supply-side of the service innovation.

2.1.4. Conclusion on the crucial role of the supply-side factors on success and failure.

⁷⁸ WEICK, K.E., (1993), “Collective Mind in Organisations: Heedful Interrelating on”, Administrative Science Quarterly, Vol 39, 3, pp357-379.

The first part of this review on service innovation revealed that the supply side factors contribute strongly to the success or failure of the launching. Though market factors seems to play their role in final successes, **it appeared that the overall synergies with the existing services, the intra-organisation involvement on the development project, the integration of the different departments and the communication flows between the participants of the project could contribute to a great extent to the final result.** Because the design of a new service involves many departments and actors, the achievement of successful development appears to be strongly influenced by the organisational factors that could support or even prevent the launching of new offers.

This support the need to investigate more clearly the supply side of the creation of new services. Thus, it may be suggested to review the work on the management of the development process in order to analyse the way it can lead to the design and launching of successful offers.

2.2. RESEARCH ON THE PROCESS OF NEW SERVICE DEVELOPMENT.

This research perspective aimed at the identification of the process adopted to develop new services. The underlying assumption was that an analysis of good and bad practices may lead to improvement in the results, either in terms of commercial result or in terms of time.

2.2.1. Innovation as a structured process

The first perspective adopted by the authors was to analyse the development process as a succession of different steps. They followed the initial investigations done on products by Booz, Allen and Hamilton (1982)⁷⁹, the research driven by Cooper (1990, 1992, 1993, 1994)⁸⁰ and Cooper and Kleinschmidt (1987, 1991)⁸¹ which described innovation as an organised process made up of well defined steps. The first and intuitive way of building a development process is to divide it into different stages. In this initial approach, development was considered as a linear process, in which the division of work followed production flow. Innovation moved from the first scientist approach to the market launch.

In this conception, Cooper's (1990, 1993) research tried to identify the main stages defined by companies and then tried to find the most efficient combination. His first assumptions were that six stages were necessary to develop adequate products as described in figure n°10. Based on quantitative surveys, his conclusions led to the definition of a stage gate model, which detailed each main steps of the development process and require formal decision for each of

⁷⁹ BOOZ, ALLEN , HAMILTON, (1982), *New Product Management for the 1980s*, New York, Booz, Allen & Hamilton.

⁸⁰ COOPER, R.G., (1990), "State-gate Systems: A new Tool for Managing new Products", *Business Horizons*, Vol 33, 3, May-June.

COOPER, R.G., (1992), "The New Prod System: The Industry Experience", *Journal of Product Innovation Management*, Vol 9, pp 113-127

COOPER, R.G., (1993), *Winning at new products: Accelerating the Process from Idea to Launch*, Cambridge, Addison Westley.

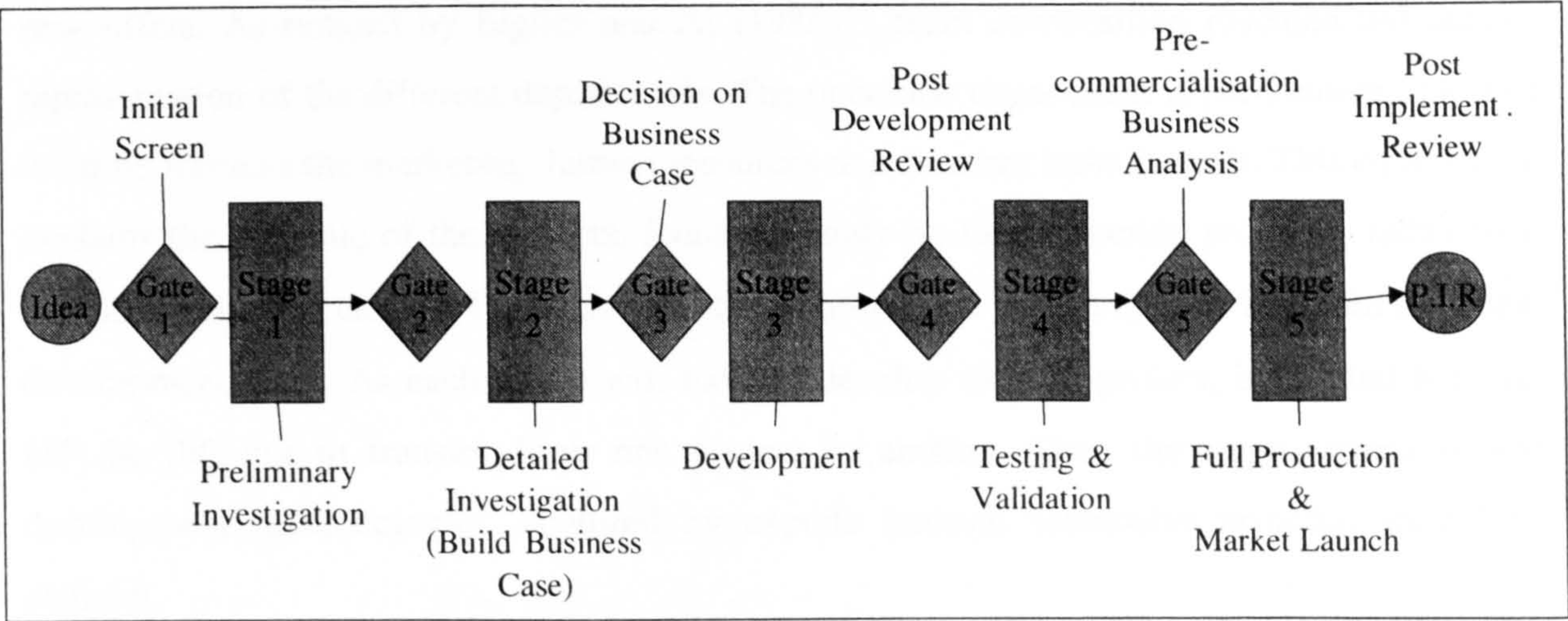
COOPER, R.G., (1994), "Debunking the Myths of New Product Development", *Research Technology Management*, Vol 37, 4, pp 40-50.

⁸¹ COOPER, R.G., KLEINSCHMIDT, E.J., (1987), "New Products: What separates the Winners from the Losers", *Journal of Product Innovation Management*, Vol 4, 3, pp 169-184.

COOPER, R.G., KLEINSCHMIDT, E.J., (1991), "New Product processes at leading industrial Firm", *Industrial Marketing Management*, May, Vol 10, 2, 137-147.

them. The results validated that such a process was more efficient than any random methodology. This model, described below, analysed the process from the initial ideas to first launch. Moreover, Cooper (1993) also highlighted the fact that success is linked to the level of knowledge transferred in each stage. The more competencies are thrown at each stage, the more chance there is of companies succeeding.

Figure n°10: The State Game System



This approach provides a good framework and is essential for complex products. It means that part of the process must be rationalised to be conducted more efficiently. This vision allows the steps of the process to be put in order, to reduce errors, and then to avoid extra or useless work. By doing so, it might be expected that development speed and productivity will be improved. Consistently, further research shows that for relatively mature products, extensive planning and overlapped development stages improve final results as stated by Zirger and Maidique (1990) ⁸².

Given those assumptions, most of the results are very deceptive for service industries. The observation of the N.S.D. practices revealed that the development process seemed to be very

⁸²ZIRGER,B.J., MAIDIQUE, M., (1990), “ A model of new product development: an empirical test ”, Management Science, 36, pp 867-883.

informal. As said by Edgett (1993, 1996), Scheuing and Johnson (1989)⁸³, Salleh and Easingwood (1993), and Jallat (1992)⁸⁴, the entire process is characterised by informal development steps achieved without a clear and well identified method. Consumers are not very often involved in the development process. Marketers, when they exist in the structure, do not appear as leading any project. Both methodologies and decision processes are not very clearly formalised. Research converges on only three points.

First, task forces, development teams and Ad Hoc groups achieved and supported the development. In very few cases, research and development departments exist in order to create new offers. As noticed by Eiglier and Al (1986)⁸⁵, team composition revealed unbalanced representation of the different departments. The operation department is predominant most of the time whereas the marketing, human resources and finances remain weak. This equilibrium explains the dynamic of the projects, focused mainly on the servuction problems rather than on consumer expectations. These statements suggested that each project is achieved by a new development team. As each group will have to develop its own project, individual learning will be difficult to transfer from one project to another. Then the improvement of the development methodologies, acquired by experts through successive projects, should be difficult.

Second, the main identified source of the generation of ideas seems to be the competitors as underlined by Davison, H., Watkins, T., Wright, M. (1989)⁸⁶. This leads service innovation as being considered reactive rather than pro-active. Many reasons could explain this passive attitude. As stated by Scheuing and Johnson (1989), no barriers may protect an initial investment. Because they are processes or deeds, services are difficult to patent. Then, as such innovation cannot provide lasting competitive advantages, the prevalent attitude may be to react to changes in the environment.

⁸³ SCHEUING, E.E., JOHNSON, M.E., (1989), "New product development in Financial Institutions", *International Journal of Bank Marketing*, Vol 7, n°2, pp 17-21.

⁸⁴ JALLAT, F., (1992), *Management de l'Innovation dans les Entreprises de Service au Particulier, Concept, Processus et Performance*, Thèse de Doctorat de l'Université de Aix-Marseille III, Juin.

⁸⁵ EIGLIER, P., LANGEARD, E., JALLAT, F., (1986), "Contribution à l'étude du nouveau service: concepts et pratiques manageriales", *Rapport de Recherche et de l'Enseignement Supérieur*, IAE Aix en Provence.

⁸⁶ DAVISON, H., WATKINS, T., WRIGHT, M., (1989), "Developing New Financial Products: some Evidence of the Role of Market Research", *International Journal of Bank Marketing*, Vol 7, n°1, pp 8-15.

Third, the consumer is forgotten in the innovation game. Our authors systematically testify to the weakness of marketing. Eiglier and Al (1986) underlined that only one firm out of the forty used a quantitative survey in order to test concepts, interactions or even the interest of the final offer. Market analyses are globally defined on the basis of secondary sources, commonly used by competitors. The existence and importance of targeted segments are not strictly tested. It is also reported that technical problems systematically overcame the interest for customers.

Given these statements, the efficiency of the development process appears to be confusing and troublesome. On the one hand, it is difficult to assert that random methodologies may lead to success and the observation reported that a well-structured approach may be fruitful. The work of Reidenbach and Moak (1986)⁸⁷, based on US financial firms, highlighted that firms using more formal procedures succeed more frequently, even if the development's duration last longer. Edgett and Jones (1991) observed a successful innovation of the "MAX" new service developed by using a very formal process. No less than sixteen stages may be identified, including marketing research, business plan, I.T. development, agreement and post launching evaluation stage. Supporting the idea of formalisation, a flow chart provides an accurate description of the process. Nevertheless, the conclusion highlighted the fact that the process itself cannot be related to its final success. The author concluded on the importance of the unforeseen co-operative behaviour between departments.

Similarly, Hart and Service (1993) concluded to the predominance of the organisational factor on the development process. In their case study of a firm distributing electromechanical and electronic components, the description of the working habits and the routines revealed a very formal process for the development of a new product. Each stage of the development was formalised by documents, which defined how to transfer information from one department to another. The entire process was well defined through accurate procedures. Nevertheless, the results show unforeseen delays in the launch planning and disastrous misunderstandings between departments.

⁸⁷ REIDENBACH, R.E., MOAK, D.L., (1986), "Exploring Retail Bank Performance and New Product Development: a Profile of Industry Practise", *Journal of Product Innovation Management*, Vol 3, n°3, pp187-194.

Jallat (1992) made a similar statement in a quantitative approach. Investigating 52 service firms, the survey revealed the same contradictory results. On the one hand, it is observed that the degree of sophistication of the development process has a positive impact on the performance of new activities. On the other hand, the respective importance of the different stages greatly differs for each sector. For instance, the importance of the stage of implementation of the new services, significantly important for volume markets, is not confirmed in the other sectors. Moreover, though characteristics of the structure in charge of the development have an impact on performances, it has been observed that organisational mode greatly differs from one sector to another.

Given these contradictory results the fundamental assumption of the importance of a structured development process remains to be confirmed for the service sector. The state gate system perspective that is of a great help in formalising and organising the entire process is not clearly confirmed for services. Moreover, it appeared to be very badly fitted with the systemic approach, described by Eiglier and Langeard (1987) which required a strong level of interaction all along the process. By making a distinction between successive stages devoted to each actor of the firm, the Cooper (1990) model separates each step from the other by a formal decision. If rigorously applied, this vision of a development process entailed a weak level of interactivity between the participants of the process. Therefore, weak co-ordination must be expected and could result in weaker results.

These conclusions suggested that further investigations must explore the nature of the innovation's process:

- The nature of the development process remains to be understood. First, the simple description of the different stages is not sufficient in itself to explain the nature of the process. Next it is difficult to understand the reasons of the progression from one stage to another one. The same problem was bound to arise when the formal decision itself was investigated. The stage-gate model does not provide any understanding of the decision process, of the people involved in it, of the way they influence it. Therefore, it is impossible to conclude on the efficiency of the formal answer provided at each step.

- Moreover, as it demonstrated in the previous chapter, service innovation may be of a very different nature. It may rely on technological change, the transformation of the client-personnel interaction procedures or in the redefinition of the supportive infrastructure. As quoted by Edvardsson, Haglund and Mattson (1995), these different transformations are not strictly comparable. According to this statement the different development steps and their nature must differ and produce divergent effects.

If the research focused on innovation, as a structured process, seems to produce contradictory results, a second perspective offers fruitful results on innovation. Much research has underlined the importance of the social context on the development process. This reinforces the interest of adopting an organisational perspective on the development process.

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2.2.2. Development process from a social perspective.

Many statements highlighted the interest of an organisational approach of service innovation. First, all the authors stated that multi-functional teams, specifically created for this task, prevailed in the management of the development process. The observation revealed that new services are above all the result of a co-operation rather than the result of a "champion" talent, either individual or departmental. This statement is made even if a champion formally drives the process. Edgett and Jones (1991) considered the high level of personal contact maintained by the product manager all along the project as factors of success. Moreover, they also noticed the high commitment of the senior managers, as the high interaction process established all along the process, as being the main success factors. The development methodology involved submitting a business plan to approximately twelve people of various departments. As quoted by the authors describing this procedure: "no precedent existed to gain the approval and the co-operation of other departments". This particularity partly explains why a service company may develop offers though neither marketing department nor R&D department could exist. Though not explicitly quoted by the authors, the N.S.D (New Service Development) should be linked with the internal possibility or will of a co-operative behaviour.

Second, as previously observed in the work of Edgett and John (1991), Hart and Service (1993), Raesfeld Meijer, A., De Ruyter, K., Cabo, P., (1996), the change in the service offer entailed a change in the organisation. Edgett and John (1991) reported that the innovation process began with the creation of a new marketing department, in charge of the development process. At the same time, due to a changing environment, a new organisation of the distribution network was adopted. Moreover, the development process was redesigned, integrating a greater involvement and contribution of the various departments.

The statements made by Raesfeld Meijer, A., De Ruyter, K., Cabo, P., (1996) reinforced the links existing between service innovation and organisation. Their research investigated the changes in the social networks of a company during an innovation process. They measured both cognitive similarities and communication frequencies of the head of departments before and after the development. Their research highlighted the important changes induced by innovation. The network, analysed through the communication frequency, was deeply transformed.

Similarly, carrying out "action research", Hart and Service (1993) established that a change in organisation was necessary to develop a shorter N.S.D. successfully. As a matter of fact, considering sequential N.S.D. used by this firm, they reported how communication problems and divergent long term visions between the different departments, marketing, purchase, laboratory and packaging, induced serious delays in the launching schedule. Efficient N.S.D. required a "functional integrative perspective", setting up a less formal but more communicative organisation, improving shared information and decision making.

The same conclusion emerged from the work of Jon Sundbo (1997)⁸⁸. He did three in depth analyses on the development process of Danish financial companies. He observed that the creation was achieved through informal social interactions between employees, which produced the new ideas and procedures in a trial and error process. During the innovation process, and because of innovation, no books, no models, no consultant or previous experience were of any use. The innovative process was not based on a predefined plan. It

⁸⁸ SUNDBO, J., (1997), "Management of innovation in Services", *Service Industry Journal*, Vol 17, n°3, pp 432-

resulted from both strategic intent and from the adaptation of the procedures and rules to the unexpected lessons resulting from experience. In those cases, J Sundbo (1997) observed that companies tried to learn from their own experiences. He admitted that the innovative service was impossible to create without a learning process, involving multiple actors of the organisation.

J Sundbo (1997) highlighted one of the contradictions of innovation. On the one hand, the creation of a new service must be intentional to result in the allocation of budgets, means and time. Whatever an organisation might be, it has to plan and co-ordinate efforts in order to avoid random or uncontrolled behaviour. This results in the production of a strategic plan or of a strategic paradigm, defining the economic priorities and financial goals, and establishing programs of actions. According to this strategic perspective, the innovation process must be considered as deliberate and connected with other organisational purposes. In such a perspective, innovation must appear as a planned effort and a deliberate effort.

On the other hand, innovating means creating and commercialising an object (a thing, a process) which does not already exist. Therefore, the attainment of predefined objectives remains illusory. The strategic intent has to match the uncertainty and can not be considered in itself as the means to produce a result. Before the beginning of development, the behaviour of clients, the reaction of the actors involved in production, the goodwill of the distributors and finally the final turnover and profit remain impossible to predict accurately. As new unexpected opportunities occurred all along the process, emerging practices and unanticipated outcomes led the development process to unexpected solutions. These results reinforced innovation as being a rupture in the habits due to the creation of something new like a product, a service or an interaction process with the customer.

Eventually, J Sundbo (1997) concluded by saying that both strategic intent and learning were related to the development process. The strategic intent initiated development, often by providing the initial impetus through development plans and strategic frameworks. Formal processes as in the stage-gate systems are the result of efforts to guide development. However, as development cannot anticipate unexpected events, learning must be carried out. By trial and

error, people in charge of the project will invent ways of learning the reaction of potential actors. By trial and error, they will select the most efficient design and by the same method, the nature and the content of the following step. So the design of the solution can not be included in the initial plan. Building a new solution means reducing uncertainty by acquiring knowledge of the solution itself. In this way, the management of service innovation may rely on the ability of the actors in charge of development to manage the learning process and to reduce uncertainty.

This fourth piece of research led to the conclusion that both formal structure, informal communication networks and working processes are transformed during N.S.D.. They also suggested that this transformation relies on both strategic intent and on learning. Therefore, service innovation appears to be related to the organisational components of the firm. They can affect the dynamics of the process as well as its main stages. They may support or compromise the expression of strategic intent and also prevent the process of learning. Such a conclusion leads to providing further research that could investigate the links existing between the innovation process and the organisation.

2.3. CONCLUSIONS: ABOUT THE INTEREST OF THE SUPPLY SIDE APPROACH OF INNOVATION FOR SERVICES.

The research on service innovation previously carried out led to many conclusions that would guide subsequent research. Firstly, among the different success criteria identified, the one linked to the supply side perspective provided the least contradictory observations. Secondly, the adoption of the supply side perspective on innovation entails focusing on the organisational aspects that will provide the scope for further inquiry. Thirdly, although research to date has contributed by identifying the supply side perspective for explaining success and failure, no theoretical model has as yet been provided. This provides the main objective of the current research.

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2.3.1. Innovation from the supply-side perspective.

The review of the research related to the supply side perspective lead to two contradictory statements. On the one hand, the impact of the factors linked to the supply side are clearly linked to success in the design and launching of the new offers. On the other hand, it has been investigated mainly through the examination of communication flows. Any broad theoretical framework must be extensively proposed and tested. This justifies the interest of further research on service innovation from the supply-side perspective.

The adoption of such a perspective entails defining the meaning of innovation. Investigation of the theoretical definition of services provided a definition that encompasses the different facets of service innovation: “From the supply-side, service innovation is an intentional renewal of the client’s utilities that may be achieved through the change of the intangible processes of delivery, which may be purely intangible or supported by the infrastructures (the building, the information systems). For this intangible part, service innovation is achieved in three ways: the intentional transformation of one or many stages, the design of an entirely new sequence of actions, or the change in the duration of the process. This definition excludes organisational changes, if it does not result in the transformation of the interaction client/firm processes.”. Because none of the works on

service innovation contradicted this definition, its adoption as a working approach will facilitate the further investigation. One purpose of the research is to confirm its validity.

Adopting this perspective entails carefully redesigning further investigation. For example, in their previous work, the authors regrouped, often indifferently, non-comparable kinds of innovation. This is no longer possible in the supply-side perspective. As an example, the creation of a financial innovation may be obtained by either the technological infrastructure or the change of procedures during interaction with customers. The supply-side perspective entails investigating closely what differs in the production of different innovation.

Similarly, most of the quantitative work created samples that mixed multiple sectors. This suggests that innovation could have the same sense whatever the context might be. In other words, it should be possible to compare innovative projects for banks as well as transportation companies, for catering and for firms of consultants. This assertion remains to be validated from the supply-side perspective. Though they may be heterogeneous, the different sectors such as banking, industrial services or retailing may be comparable according to similar processes of delivery. Then, and only for a comparable change, the building of a development model should make sense, and the comparisons should be relevant.

2.3.2. Towards a theoretical model of New Service Development.

The initial results underlined the crucial importance of organisation on innovation. However, it must be noticed that none of the different research provided a theoretical framework that could lead us to an in-depth understanding of the statements. The observation of the inseparability led to the conclusion that organisations are a determinant variable. The observation of the interaction process revealed that it is anchored in a set of routines, procedures and rules. As a consequence, it could be asserted that innovation, defined as the transformation of the interaction process, entails a change in the set of routines and rules previously adopted. The way this system is transformed could provide new insights on the success and failure factors that may support or prevent innovation. Given the close relationship between the interaction and the delivery process, the transformation of routines, procedures and rules could appear as being the core of the innovation process.

The research that ensues from those statements must aim to identify the organisational factors that support or prevent service innovation. Given the numerous works already realised on organisational behaviour, it may be suggested that one needs to identify the existing theoretical framework and to use it in the perspective of service innovation. For instance, the research of Jon Sundbo (1997) suggested that the service innovation process may be conceptualised as a learning process. This could be linked to existing empirical and theoretical work on organisational learning. Similarly, we observed that organisational features influence the innovation rate in the case of production, as initially developed by Burns and Stalker (1961)⁸⁹. Therefore this theoretical model could also provide the basis for further investigation.

Nevertheless, the way this change is achieved is not really compared to existing models of innovation. Consequently, all the organisational factors that could have a potential influence on the result may be included in the scope of the research. For example, the composition of the team in charge of the project could have a great impact on development. The communication process between the members of the organisation all along the project may alter the result to the point that it could fail. The overall fit of the project with existing competencies is bound to support its success. Then a deeper understanding of the potential links between the model and the initial observations should lead to the formulation of the initial hypothesis.

Adopting the supply-side perspective on service innovation entails adopting a theoretical model that can account for the influence of the organisational features and characteristics on the development process. Amongst all of them, the Organisational Learning models has already been identified as relevant but for New Product Development. The research will review their interest for the development of New Services.

⁸⁹ BURNS, T., STALKER, R., (1961), *The management of innovation*, London, Tavistock.

3. LINKS BETWEEN NEW SERVICE DEVELOPMENT AND LEARNING: A REVIEW.

Because innovation was recognised very early on as one of the engines of economic development, it has been a topic of debate for hundred of years. Research on innovation unfolded for so many decades that even a synthesis could go beyond the limits of a thesis. This topic was developed most of the time with such enthusiasm that it was difficult to separate the incantations on the potential virtues of innovation from the actual knowledge of what contributes effectively to sustaining the development. Moreover, the topic itself does not facilitate research. Because innovating means creating something new, the assumption that the previous successes might help forthcoming development remains to be confirmed. As stated by Dosi (1988)⁹⁰ “Almost by definition, what is searched for cannot be known with any precision before the activity itself of search and experimentation, so that the technical (and even more so commercial) outcomes of innovative efforts can hardly be known ex-ante”. This put learning at the centre of the innovative process. If the potential results of an innovation are impossible to forecast in advance, then the development process is made of the actions that turn the initial intuitions and representations in tangible or intangible components well fitted with the contexts. In order to detail those ideas, this chapter will provide first an overall definition of the innovation, then will present the different model describing the process of innovation. Then the links between innovation and learning will be reviewed. Eventually, the interest of the existing literature for service innovation will be discussed.

By separating innovation from invention, Schumpeter (1911, 1942)⁹¹ identified clearly the entrepreneur as being the source of economic development. Later, he also recognised that the modern firms, equipped with R&D means became the central innovative actors. This initial work was enriched by the contribution of many authors like Chandler (1962), Nelson and Winter (1982), Cohen and Levinthal (1990), and Pavitt (1990)⁹² who adopted the same point

⁹⁰ DOSI, G., (1988), *The Nature of the Innovative Process*, in Dosi, Freeman, Nelson, Silverberg and Soete, *Technical Change and the Economic Theory*, Pinter Publishing, London.

⁹¹ SCHUMPETER, J.A., (1911), *The theory of economic development, an inquiry into profits, capital, credit, interest, and the business cycles*, New York, Oxford University Press, 1961

SCHUMPETER, J.A., (1942), *Capitalism, Socialism and Democracy*, London, Unwin Paperback, Counterpoint, Sixth Edition, 1987.

⁹² CHANDLER, A.D., (1962), *Strategy and Structures: Chapters in the history of the American Industrial*

of view. Innovation is created by the firms, which pursue this goal in order to develop competitive and profitable positions on the markets. This is why understanding of innovation requires observing how firms behave in order to generate or adopt inventions and turn them into new commercial offers. This body of literature led to the definition of innovation, of technology and, as a consequence, of the existing links between innovative behaviour and organisation.

3.1. DEVELOPMENT OF NEW OFFERS AS THE INTEGRATION OF MANY COMPONENTS.

Innovation is described as a very broad concept that can be featured in many ways as underlined by P Trott (1998)⁹³. The definition of innovation is anchored in the firm's practices. During the nineteenth-century innovation was considered as the result of technological progress. Summarising the important dates in economic development, P Trott (1998) suggested that most of them were linked to major inventions as such as the steam engine, the iron boat or the electric light bulb. Such a statement led research to focus on the links existing between innovation and the source of inventions. It is also a source of confusion between the two concepts. Similarly, because innovation may be synonymous with newness, it is often confused with creativity as a means of generating new ideas. Convergent definitions provided by many authors have led to a clearer definition of what innovation, invention and creativity are.

First, innovation is different from invention because it includes the commercial and practical applications of the invention. Based on the previous work of Levitt (1963)⁹⁴, Rosenfeld and Servo (1990)⁹⁵ defined innovation as being the transformation of creative ideas into tangible

Entreprise, MIT Press, Cambridge, MA.

NELSON, R.R., WINTER, S., (1982), An evolutionary theory of economic change, Harvard University Press, Boston, MA.

COHEN, W.M., LEVINTHAL, D.A., (1990), "A new Perspective on Learning and Innovation", Administrative Science Quarterly, 35, 1, pp 128-152.

PAVITT, K., (1990), « What we know about the Strategic Management of Technology », California Management Review, vol 32, 3, pp 17-26.

⁹³ TROTT, P., (1998), Innovation Management and New Product Development, Prentice Hall.

⁹⁴ LEVITT, T., (1963), Creativity is not Enough, Harvard Business Review, May; 72-83.

⁹⁵ ROSENFELD, R., SERVO, J.C., (1990), Facilitating Innovations in Large Organisations, in Managing Innovation, Ed J Henry and D Walker, London, SAGE.

products or processes in order to cut costs or generate new earnings for an organisation. They summarised this definition very simply by asserting that innovation is the result of three actions. First, it is the result of a concept, which refers to an idea that is novel. By the use of techniques of creativity, it is possible to generate new concepts and ideas that do not already exist. Second, innovation is fuelled by the invention that is defined by P Trott (1984) as being the process of turning the ideas into new artefacts. As an answer to the encountered problems, novel ideas are tested and refined through multiple means and are transformed into an actual device. Finally, and this is the difference with invention, innovation is also the result of the commercialisation of the ideas and the inventions. As C. Clipson (1991)⁹⁶ said: “ the invention is the solution to a problem, often a technical one, whereas the innovation is the commercially successful use of the solution”. A simple idea or even an invention cannot be considered as an innovation until it has been designed as a commercial offer and put on the market. Similarly, P Trott (1998) summarised this idea by laying out the ingredients of the innovation as follows:

Innovation = Theoretical Conception + Technical Invention + Commercial Exploitation.

In such a definition, the authors emphasised that innovation encompasses the concepts of new generation of ideas and inventions. Thus, far from being linked to the invention, the concept of innovation refers to multiple outputs. P Trott (1998) distinguished no less than seven kind of innovations including product and process innovation, organisational, management, production, commercial and service innovations. In all these cases, the definition of innovation entails turning the creativity and invention into a commercial offer that can achieve profitability. This leads to the definition of innovation as being a process.

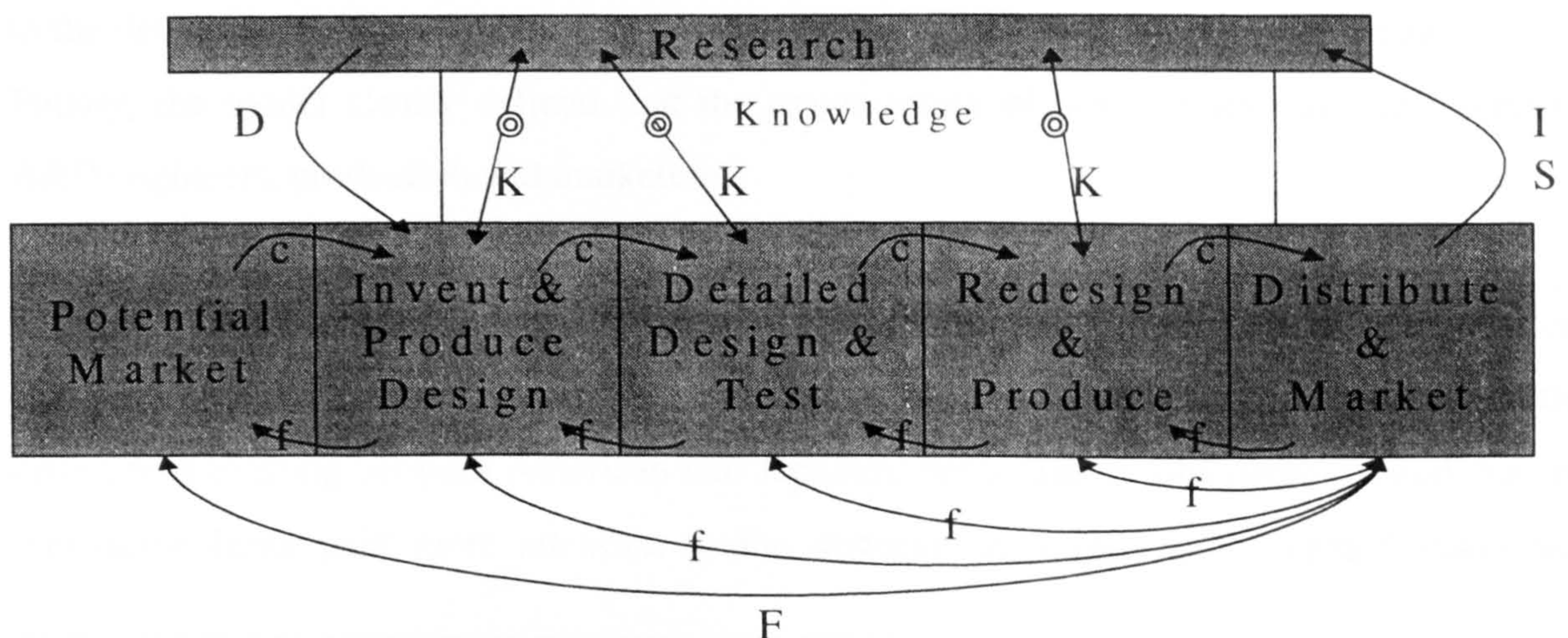
⁹⁶ CLIPSON, C., (1991), Innovation by design, in M. Oakley Ed, Design Management, Oxford, Blackwell , pp 313-321.

3.2. DEVELOPMENT OF NEW OFFERS AS A PROCESS.

The previous definition provided the main ingredients of innovation. By underlining that the innovation encompasses the entire scope of the generation of ideas, the invention, the design and the launching of commercial offers, the authors asserted that the management of innovation is a process. Myers and Marquis (1969)⁹⁷ stated that: “ Innovation is not a single action but a total process of interrelated sub-processes. It is not just the conception of a new idea, nor the invention of a new device, nor the development of a new market. The process is all these things acting in an integrated fashion”. Thus, innovating, or managing innovation, refers to the different stages of the process and to the different actors contributing to each of them.

The “chain link model” of Kline and Rosenberg (1986)⁹⁸ encompasses those two facets as described in figure n°11. Based on the sequential approach of innovation, related to the previous definitions, it described its main stages, its main contributors and the nature and importance of their relations.

Figure n°11: The interactive model of Kline and Rosenberg.



⁹⁷ MYERS, S., MARQUIS, D.G., (1969), “Successfull Industrial Innovation: a Study of Factors underlying the Innovation in Selected Firms”, National Science Foundation, NSF 69117, Washington, Quoted in P. Trott, (1998), Op. Cit.

First, the authors detailed the central process of innovation. The flow from the initial ideas to the launching on the market is described as being the main steps of the development. This flow is symbolised by the arrows C. This representation could suggest that the development may be a linear process, according to the previous definition of innovation as being the mix of a generation of ideas, invention and marketing. The authors enriched this linear and simplistic approach by putting the emphasis on the information and co-operation links between the different stages and actors.

First, the model developed the importance of the retro-actions links symbolised by the arrows f and F. This feedback will link the upstream decisions to the downstream statements and observations. It is asserted that the decision process for each stage should be strongly linked to the upstream and downstream of the decision. The short arrows suggested that the different functions must adjust their behaviour through the exchange of information. Second, the model developed the links established between the central chain of innovation and the capital of knowledge accumulated at all levels of the process. It is asserted that the development process is strongly anchored in existing knowledge. In return, the creation of innovation results in the increase of this knowledge capital accumulated by the organisation. Third, throughout the process, it is strongly dependent on the advance of the sciences and technology that can provide solutions to existing problems. In return, the launching of innovation may contribute to the development of new scientific knowledge. These links are symbolised by arrows D, I, S. Finally, the model clearly defined that the major actors of development are the scientists, R&D engineers, production and marketing.

Many statements may be deduced from the adoption of the process perspective of innovation. The Kline and Rosenberg (1986) model was applied by M Aoki (1988)⁹⁹ in his analysis of the differences existing between American and Japanese firms. The results demonstrated that the innovative firms paid more attention to the downstream stages of the central chain and

⁹⁸ KLINE, S., ROSENBERG, N., (1986), An overview of Innovation, in LANDAU, F., ROSENBERG, N., Eds, pp 275-305.

⁹⁹ AOKI, A., (1988), Information, Incentives and Bargaining in the Japanese Economy, Cambridge University Press, Cambridge, Quoted in J.J. Chanaron, (1991), Innovation Technologique et Développement Economique, Université P Mendes France.

facilitated the mutual adjustment between departments. Moreover, they encouraged the relation science-innovation during the development stages. These observations supported the assumption of a direct relation between innovation and organisation.

Numerous research has reinforced this statement, which investigated the relations between organisational factors and innovative results. Damanpour (1991)¹⁰⁰, reviewing previous research work (23 empirical studies, 21 articles, 2 books), identified the following determinants: Specialisation, Functional differentiation, Professionalism, Normalisation, Centralisation, Managerial attitude towards change, Managerial tenure, Technical knowledge resources, Administrative intensity, Slack resources, External communication, Internal communication, Vertical differentiation. One of the main findings of this work is that the results were consistent with Burns and Stalker's (1961)¹⁰¹ findings, who highlighted the existence of a link between organisation characteristics and their capacity to react to a moving environment. Organistic configuration enables fast adaptation to a changing context due to the spread of commitment all over the firm, to a strong network structure and to a continual redefinition of individual tasks with others. Therefore, the formal structure, which defined the borders of the different departments and of the organisation itself, is bound to influence the development process.

Moreover, the research focused on the communication between members of the organisation demonstrated that the informal structure also contributes to the innovativeness of the firms. The facilitation of the external communication, supported by a "gatekeeper" is recognised by Katz and Tushman (1981)¹⁰² and by Von Hippel (1982)¹⁰³ as supporting a better product design. The gatekeepers, because they can gather and translate external information, contribute to the improvement of the decisions taken during the development. Similarly, Ancona and Caldwell (1992)¹⁰⁴ found that development teams, which have more thorough

¹⁰⁰ DAMANPOUR, F., (1991), "Organisational innovation: a meta-analysis of effects of determinants and moderators", *Academy of management*, 34, September, pp 555-590.

¹⁰¹ BURNS, T., STALKER, R., (1961), *The management of innovation*, London, Tavistock.

¹⁰² KATZ, R., TUSHMAN, M.L., (1981), "An Investigation into the Managerial Roles and Career Paths of Gatekeepers and Project Supervisors in a major R&D Facility", *R&D Management*, 11, pp 103-110. Quoted in Brow and Eisenhardt (1995), *Op Cit*.

¹⁰³ VON HIPPEL, E., (1982), "Appropriability of the innovation benefit as a predictor of the source of innovation", *Research Policy*, 11, pp 95-115.

¹⁰⁴ ANCONA, D.G., CALDWELL, D.F., (1992), "Demography and Design: Predictors of the new product team performance", *Organisation Science*, 3, pp 321-341.

internal communication, defined the goals better, developed superior workable plans and adopted better prioritisation of their work. As a consequence, they achieved a superior performance. Summarising this different research Brown and Eisenhardt (1995)¹⁰⁵ concluded that: “Thus (the innovative) process performance is driven by the amount, variety and problem-solving organisation of information and by the resources available to the team. (New)Product effectiveness is driven by the input of leaders, senior management, and customer into the formation of a clear product vision. Both product effectiveness and process performance influence the financial success of the product”.

To the statement of the influence of the formal and informal organisational features on innovation, the adoption of a process perspective on innovation underlined the predominant place of knowledge. On the one hand, it is necessary to produce the responses to the problems encountered during development. On the other hand, it is said that the solving of new questions that arise during development will modify and increment the existing set of knowledge. Because innovation induces change in knowledge, the examination of learning behaviour opened a broad research stream, which encompassed the fields of economy, strategy, organisation and finally, of innovation management.

3.3. DEVELOPMENT OF NEW OFFERS AND LEARNING.

The initial statements that linked innovation and knowledge were made by Nelson and Winter (1982). Though the entire evolutionist perspective overcame the single topic of innovation, the underpinnings of their theory provided one of the most relevant frames to understanding the links between innovation and learning. As the macro aspects of this theory do not concern innovation directly, the sole concept of “routines” and their consequences will be developed here.

The authors summarised the evolutionist position by putting the emphasis on the co-ordination principles, described as being the core of organisational performance. This is only possible if the individuals, who produce the offers through co-ordinated behaviour, know

¹⁰⁵ BROWN, S.L., EISENHARDT, K.M., (1995), “Product Development: Past research, Present Findings and Future Directions”, *Academy of Management Review*, Vol 20, n°2, pp 343-378.

what they have to do, interpret the information correctly and provide the appropriate answer to the messages they perceived. Such a co-ordination is efficient only when the behaviour is free from any deliberation or debate on the choices. It is when this behaviour is restrained to a limited number of pre-defined possibilities that organisation may produce the fast and efficient responses to a given situation. The sequences of the predetermined behaviour of the organisations are called “routines”.

Routines are defined as being the equivalent, for the organisation, of individual skills. However, due to the cognitive limits of individuals and to the complexity of their interactions, the organisation is able to provide a fast answer only when the appropriate behaviour is executed as an automatism. Thus, the concept of organisational capabilities means that the firm is endowed with a catalogue of potential answers. One of them, the ability to distinguish the appropriate answer, is also considered as a capability that contributes to the firm's efficiency. Therefore, the number of routinised responses to environment's changes entail the potential capability to perform in a wide variety of situations. The firm's performance relies strongly on the knowledge memorised through the routinised behaviour. As Dosi, Teece and Winter (1990)¹⁰⁶ stated: “what is learned during a period relies on what has been learned during the previous periods.”. In order to describe their role, the authors used biological metaphors. Routines are the genes of the organisation in the sense that they condition its potential answers and development.

Pavitt (1991)¹⁰⁷ asserted that: “in a business, a combination of research and development, testing, production engineering and operating experience accumulates knowledge on the many critical operating variables of an artifact, and result in knowledge that is not only specific but partly tacit and therefore difficult and costly to reproduce.”. In saying this, Pavitt (1991) emphasised the tacit character of knowledge. This well recognised characteristic of knowledge embedded in routines justifies the necessary recourse to learning. Because the knowledge resulting from experiments is mainly tacit, and therefore impossible to codify explicitly, it is difficult to transfer from one organisation to another one. If knowledge must be

¹⁰⁶ DOSI, G., TEECE, D.J., WINTER, S.G., (1990), “Les frontières des Entreprises”, *Revue d'Economie Industrielle*, 1er trim, pp 243.

¹⁰⁷ PAVITT, K., (1991), “Key Characteristics of the Large Innovating Firm”, in *British Journal of Management*, Vol 2, n°1, pp 41-50. Quoted in P Willman, (1997), “Appropriability of Technology and Internal Organisation”, I. McLoughlin and M Harris Eds, Thompson Business Press.

considered as difficult or impossible to transfer from one organisation to another, then each organisation must build its own catalogue of routines by experimenting. Therefore, changing the set of routines, in other words innovating, means building new knowledge on the basis of the existing routines. Learning is necessarily linked to innovative behaviour. Reviewing the neo-schumpeterian authors, M Harris (1997)¹⁰⁸ stated that : “technology is represented as knowledge about product and processes rather than an independent variable with a life of its own”. The emphasis on institutionalised firm-specific knowledge offers potentially fruitful links with the sociological work on technical-organisational change”.

In such a perspective, the theory on innovation must aim at the identification of the individual and organisational factors that will create, nurture and support learning. However, the evolutionist theory, which emphasised the central role of routines, and therefore of tacit knowledge, as a foundation of firms, did not investigate them at the micro level. When it is observed, at the macro level, that the concept of routines leads to technological trajectories, the evolutionist perspective does not account for the process of the creation of knowledge. Coriat and Weinstein (1995) underlined this potential contradiction: “Disregarding the conditions that support the creation, including the incitement and control means, and the selection of the routines and their implementation, could contradict their meaning itself”. In other words, the statement of the existing knowledge could not account for the process that leads to their creation. As asserted by Harris (1997): “ The trajectory view of technological change is an inherently deterministic one, and it is apparent that the questions of power, political process and strategic choice have been marginalised in micro level investigations of the innovative firms...These oppositions form the basis for part of the conceptual divide which separates innovation theory from the industrial sociology.”.

This suggests strongly that the initial statement of the central role of the knowledge within the firms must be incremented by an analysis carried out at the micro level. Many research has investigated this perspective. By the use of the “learning by doing” concept previously developed by the Boston Consulting Group, Maidique and Zirger (1985)¹⁰⁹ featured the

¹⁰⁸ HARRIS, M., (1997), “Technological Knowledge, Strategic Choice and the Neo-Schumpeterian School”, in *Innovation, Organisational Change and Technology*, I. McLoughlin and M Harris Eds, Thompson Business Press.

¹⁰⁹ MAIDIQUE, M.A., ZIRGER, B.J., (1985), “The new product learning cycle”, *Research Policy*, 14, pp 299-313.

failures in innovation as a major way to learn subsequent projects. As stated by the authors: “The model implies that new product development success pivots on the effectiveness of intra and inter company learning. This conclusion puts a premium on devising a managerial style and structure that serves to catalyse internal and external communication.....Firms need to learn that innovation is a journey, not a destination”. Van de Ven and Polley (1992)¹¹⁰ found “no support for a model of trial-and-error learning during the initial period of innovation development, but strong support for the model during the ending development period when the innovations were being introduced in the market”. Olson, Orville and Ruekert (1995)¹¹¹, supported the importance of learning during the development of new products by stressing the importance of the cross functional exchange of ideas and information as one of the primary resources for innovation. They observed that when the firms and customers are relatively unfamiliar with a new concept, the functional task involved in developing the concept and bringing it to market are more difficult than when the project involves a more simple modification. Though they do not speak of the learning process, they conclude their research by saying: “The better the fit between a firm’s familiarity with a new product concept and the structural attributes of the co-ordination mechanism used to manage that concept’s development, the better the project outcomes are likely to be on a variety of performances dimensions, including the quality of the resulting products, its success on the market place, the timelessness with which it is developed, and the satisfaction of the functional specialists who played a role in its development”. In other words, the organisational features influence the way people in charge of the process will learn from each other to solve the questions arising all along the project. If the project seems unfamiliar, consequently a huge amount of learning is required, which is facilitated by a specific organisation.

More explicitly, Madhavan and Grover (1998)¹¹², based their work on the statement that the development teams are engaged in a knowledge producing activity. In this process: “each individual brings to the situation its skills, knowledge and strategies which affect and are affected by the situation. This dynamic interaction of individual and context results in a

¹¹⁰VAN DE VEN, A.H., POLLEY, D., (1992), “Learning while Innovating”, *Organization Science*, 3, 1, 92-116.

¹¹¹ OLSON, E.M., WALKER, O.C., RUEKERT, J.R., (1995), “Organizing for effective new product development: the moderating role of product innovativeness”, *Journal of Marketing*, Vol 59, pp 48-62.

¹¹² MADHAVAN, R., GROVER, R., (1998), “From embedded knowledge to embodied knowledge: New product development as knowledge management”, *Journal of Marketing*, Vol 62, October, pp1-12.

cognitive performance of the group. The distributed cognition notion implies that teams should function more as a single unit engaged in a single process of expertise, rather than purely as a well co-ordinated group of discrete, individual contributors". The development team possesses embedded knowledge it will use to create the new product. As a result of the project, the new product is considered as embodied knowledge. Therefore, the development project is described as the management of a transition from embedded to embodied knowledge.

Investigating suppliers of the automotive industry during the development of new products, K. E. D. Söderquist (1997)¹¹³ underlined that learning situations occurred all along the process both at individual and collective levels. His research highlighted particularly three components of the learning process. Transfer between individual and organisational learning happens through direct communication between team members and collective oriented activities. The occurrence of single and double-loop learning may be identified. Lack of formalised knowledge leads to procedures badly fitted with production requirements. Moreover, he could establish that learning occurred within the firm in the intra-functional situations but also in the inter-firms situations common in a supplier-producer relation.

This research provided multiple evidence of this statement: innovating, which is well admitted and described as a learning process, is strongly influenced by the organisational factors which prevent or support the learning. This led Brown and Eisenhardt (1995) to conclude their review, which focused on the links between many organisational factors and innovation, on the importance of opening the "black box" previously identified by the economists such as Nelson and Winter (1982): "Complementary to this branch (the economic perspective) of innovation research, the product development literature opens up that black box by providing depth and rich understanding on how actual products are developed within firms, a critical core capability of many firms.". This strongly suggests that further research must be done in order to relate to the creation of knowledge within the firm. Organisational learning may provide the appropriate framework to grasp the nature and content of innovation, and specifically of service innovation.

¹¹³ SODERQUIST, K.E.D., (1997), Inside the tier model: Product development organisation and strategies in

3.4. CONCLUSION: INTEREST OF THE ORGANISATIONAL LEARNING MODEL FOR NEW SERVICE DEVELOPMENT.

The interest of the organisational learning model for product innovation no longer has to be demonstrated. Because this research stream focused on the technical artefacts rather than on the processes, its relevance for service innovation remains to be confirmed. More specifically, the application of the concepts of routine, knowledge and learning to the intangible processes previously described have to be validated by further examination and empirical statements.

The description of the intangible processes of interaction between clients and firms is easy to link to the one of the routines. First, what is called a routine is not attached to the nature of an output, tangible or intangible. The routines support the achievement of complex tasks whatever their specialisation might be, producing, purchasing, hiring or controlling. From the evolutionarist perspective, the routines are the result of collective problem-solving strategies. During the production of a collective outcome, the individuals will use his own knowledge, achieved through learning, in order to interact with the other individuals in order to solve a problem efficiently. As underlined by B. Guilhon and P. Huard (1999)¹¹⁴: “the routines have a determinant role as a co-ordination mechanism. They are an efficient means of solving the problems encountered by the firm.”. Thus, from the evolutionist perspective, the production of tangible objects does not differ from the one of intangible processes, as much as they are produced collectively.

Resulting from this statement, the concept of knowledge itself cannot separate the tangible outputs from the intangible processes. In both cases, the creation of efficient routines relies on the knowledge resulting from previous experience. According to the systemic analysis of “servuction” developed by L Shostack (1985) and Eiglier and Langeard (1987), the delivery of value requires the use of the servuction system made up of the front line and back-office employees, of the infrastructures and information systems and also of the client as a co-producer. Co-ordinating this complex system entails that each actor, including the customers,

automotive expert supplier firms, Doctor of Business Administration Thesis, Henley Management College.

¹¹⁴ GUILHON, B., HUARD, P., (1999), “La firme evolutioniste comme espace cognitif: portée et limites”, In M. Basle, R. Delorme, J.L. Lemoigne and B. Paulré, *Approches Evolutionistes de la Firme et de l'Industrie*, L'Harmattan Eds.

have acquired knowledge about their role in the system, about the behaviour that is expected from them, about the behaviour that can be expected from the others and finally about the intermediate and final outcomes. The accumulation of experience, transformed into routinised behaviour, becomes the condition of a fast delivery, well suited to customer expectations.

The empirical observations made by the research on service innovation previously reviewed, confirmed this initial theoretical statement. The quantitative research of De Brentani (1991), Martin and Horne (1993), Cooper and Al (1994) revealed that the overall fit of the new service with the existing portfolio of offers explained to a great extent the final success or failure. This statement, not explained by any of the authors, is easy to understand in the knowledge perspective. The launching of a new service requires building an entire corpus of routines learned by experience. Given the complexity of the service, the fit with the existing routines limits the scope and range of learning. The choice of developing new processes closely linked to existing routines facilitates delivery by preventing a lack of co-ordination. As stated by Cooper and Al (1994): “The top financial performers among new service products featured a *strong fit between the needs of the new products and the company in terms of marketing resources and expertise, advertising and promotion resources and expertise, and the salesforce and distribution expertise*¹¹⁵”. This focus on the resources as critical factors of success legitimises the use of a theoretical framework based on the knowledge and competencies of the firm.

The qualitative inquiries led by Hart and Service (1993), Edgett and Jones (1991), Edvardsson, Haglund and Mattson (1995) concluded that a communicant organisation, focusing on the sharing of information and aiming at functional integration is bound to provide better results. These statements emphasised the importance of cognitive activity in the development of new processes. Given the definition of routines, it is easy to understand that, each time a novel process has to be produced or implemented, an intense cognitive activity will be necessary in order to invent new solutions, to learn from the experience and to set up new co-ordination features. In the same perspective, Raesfeld Meijer and Al (1996) underlined the importance of shared meaning in the co-ordination of productive efforts. By stating that the disintegration of the organisation prevents the building of a new set of co-

¹¹⁵ The focus on the resource perspective is done by myself.

ordinated routines. When the sharing of ideas is impossible, the sharing of actions appears to be difficult to obtain.

These different statements lead us to conclude in the interest of organisational learning as a potential theoretical framework for explaining service innovation. By learning in a collective perspective, the individual may create new routines and therefore new services. Nevertheless, we observed that the links between existing knowledge, learning and organisation were not explained by the evolutionist perspective. Moreover, the links between organisational learning and service innovation are far from being explicit and fully investigated. **Having a clear image of service innovation requires first developing an extensive approach of what learning means within the organisation and then to cover the potential links which exist between learning and innovation.** If validated, organisational learning could provide an interesting framework for the understanding of service innovation.

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**PART TWO: DEFINING THE APPROPRIATE LEARNING MODEL
FOR THE NEW SERVICE DEVELOPMENT.**

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1. INTRODUCTION

The previous chapter of the research concluded to the potential links between new service development and learning processes. Linking service innovation to organisational learning entails developing the concepts of learning. This is the purpose of this chapter. Two arguments urge to adopt an individual perspective on innovating and learning. First, both design of new service and learning rely on the individual that accomplish those two processes. Therefore, it may be asserted that the understanding of the concepts rely on the analysis of the role and place of the individual in the process. Second, as the early research of Simon (1955, 1957, 1991) and Simon and March (1958) on organisational learning has been strongly influenced by the cognitive psychology, it appears necessary to introduce the concepts in the chapter 2 of this part. However, the concept of organisational learning overcome the individual one. Even though analogies may be established between the two, it is well admitted that the organisational behaviour must be distinguished from the one of individual. Thus, chapter 3 will define the organisational side of learning. The lasting ambiguity of organisational learning (no learning may be done without the active contribution of individual but the organisation often survive to the departure of the individuals) will lead to investigate the extension of individual experiment to the organisational level. This will be developed in the chapter four. All along this review, the involvements for service innovation will be discusses. The review will conclude on the interest of organisational learning concept for service innovation.

The research on strategy and the economy has extensively used the Organisational Learning theories developed in the 50's. The core assumption supporting those works is that the tangible and intangible earnings accumulated by the firm supports efficiency. For Nelson and Winter (1982)¹¹⁶, knowledge delineates what the firm is able or not to produce. In such a perspective, the research in strategy considered knowledge as a resource that would provide a competitive advantage. As underlined by J.C. Tarondeau (1998)¹¹⁷, "The dynamic of learning and the building up of experience constitutes the distinction between firms. The knowledge do

¹¹⁶¹¹⁶ NELSON, R.R., WINTER, S.G., (1982), "An evolutionary theory of economic change", Production Sets and Organizational Capabilities, Belknap/Harvard, pp 59-65.

¹¹⁷ TARONDEAU, J.C., (1998), Le management des savoirs, P.U.F., Paris, pp 29.

not exist neither in the blueprints nor in the memory of one member of the organisation. Mastering of knowledge is one attribute of the organisation.”. Thus, the concept of competencies, developed in the field of the strategy by Hamel and Prahalad (1994)¹¹⁸, became one of the competitive edges of the firms. Not surprisingly, an important research stream investigated the definition and the understanding of the creation, storage, diffusion and use of competencies and knowledge within the firm.

Similarly for innovation, the focus on competencies put learning at the centre of debates. Being able to produce a new offer means to increase or at least to modify the competencies of the firm. As said by P. Trott (1998)¹¹⁹, “The accumulation of knowledge and the effective assimilation and application of this knowledge are what appear to distinguish innovative firms from their less successful counterparts.”. However, the concept of learning applied to organisations raised multiple debates. On the one hand, it is easy to demonstrate that the knowledge of the organisation is supported by the individuals directly or indirectly involved in it. On the other hand, the individual is rarely in situation to master the sum of knowledge required to perform an entire range of processes. As a consequence, research used concepts developed in the cognitive psychology but enriched them with the components of the organisational behaviour.

The field of psychology provided most of the research on individual learning. It focused on the way an individual acquires knowledge and on the way that knowledge modifies his behaviour. The behavioural theory and the theory of cognitive psychology contributed mainly to the definition of learning. The definitions, provided by this second stream, influenced strongly the current developments of research on learning. The initial work of Tolman (1932)¹²⁰, or more recently of Piaget (1970, 1974)¹²¹ resulted in concepts of cognitive activity clearly differentiated from the behaviourist approach. The cognitive paradigm influenced most of the theories used in the investigations on firms to the point that it can be asserted that most of the organisational learning theories are based on it.

¹¹⁸ HAMEL, G., PRAHALAD, C.K., (1994), *Competing for the future*, Harvard Business School Press.

¹¹⁹ TROTT, P., (1998), *Innovation Management and new Product Development*, Prentice Hall, pp 68.

¹²⁰ TOLMAN, E.C., (1932), *Purposive behaviour in animals and men*, New York, Century

¹²¹ PIAGET, J., (1970), *L'épistémologie génétique*, P.U.F., Paris

PIAGET, J., (1974), *Réussir et comprendre*, P.U.F., Paris

PIAGET, J., (1974), *La prise de conscience*, P.U.F., Paris

Having adopted a different perspective, the school of psychosociology underlined that group's dynamic influences the building of the individual representations and therefore learning. Though they accepted the findings of Piaget, W Doise and G Mugny (1997)¹²² emphasised the theoretical insufficiency of the individual perspectives. According to them, cognitive development cannot be explained by itself. Adopting the thesis of Smedslund (1966)¹²³, they asserted that «the occurrence of communication conflicts is the necessary condition for intellectual decentration ». In other words, even if it does not pretend to explain the entire scope of this learning, the perspective of social interaction provided a better understanding of the dynamics of the creation of knowledge.

However, these different theoretical streams did not focus on the adaptive behaviour of organisations. During the 50's, H. Simon (1955)¹²⁴ created the concept of organisational learning in order to explain the way organisations process the information resulting from the interaction with the environment. By asserting that organisational knowledge cannot be considered as the sum of individual knowledge, the organisational learning stream may be distinguished from that of psychology. On the one hand, learning takes place in individual heads only. This entails developing the psychological approach focused on the individual. On the other hand, as highlighted by many scholars, any individual is in a situation to master the entire knowledge created by an organisation. Therefore, the psychological perspective is not sufficient in itself to explain the creation, acquisition and exploitation of knowledge within the organisation. As a consequence, the way it is collectively created, shared and used is impossible to bypass. This approach, summarised in the organisational learning perspective, provides the theoretical body of the collective learning phenomena.

Nevertheless, the linking of the individual and organisational levels of learning remains complex and not very well known. Though some of the most recognised researchers in the management field had previous experience in cognitive psychology, research fields tend to

¹²² DOISE, W., MUGNY, G., (1997), *Psychologie sociale et développement cognitif*, Armand Colin Ed, Paris.

¹²³ SMEDSLUND, J., (1966), " Les origines sociales de la décentration ", in F Bresson, H de Montmollin, *Psychologie et épistémologie génétique, thèmes piagétien*s, Dunod, Paris.

¹²⁴ SIMON, H.A, (1955), " A behavioral model of rational choice ", *Quarterly Journal of Economics*, Vol 69, pp 99-118.

remain separate. Crossan, Lane and White (1999)¹²⁵, in a review of the well known articles on the topic, highlighted that very few of them established links between the two levels. Though they investigated the links between cognition and action, March & Olsen (1975), Daft & Weick (1984), Senge (1990), Huber (1991), March (1991), Nonaka & Takeuchi (1995), Watkins & Marsick (1993)¹²⁶ did not provide further investigation on the links existing between the different level of the organisation. More specifically, the way one level interacts and influences the other level has been ignored. This lack of theoretical articulation between the different levels of learning blurs the understanding of the organisational learning process. Moreover, it undermines the recommendations that could be made to enhance the learning process in a given firm. Though Crossan, Lane and White (1999) proposed a model, it remains to be tested on empirical contexts in order to be validated.

As a consequence, the third stream -- the individual learning, organisational learning and the linkages between individual and organisation -- will be developed in this chapter. The understanding of organisational learning requires reviewing the main findings resulting from psychology and socio-psychology. The analysis will have to investigate the main concepts developed by cognitive psychology and measure their interest for the research in organisations. As a direct extension of these statements, the organisational learning theory will be developed. Finally, the interest of this entire body of research for service innovation must be extensively discussed. This analysis will be used in order to define the way a better understanding of service innovation can be acquired.

¹²⁵ CROSSAN, M.M., LANE, H.W., WHITE, R.E., (1999), "An Organizational Learning Framework: From Intuition to Institution", *Academy of Management Review*, Vol 24, n°3, pp 522-537.

¹²⁶ MARCH, J.G., OLSEN, J.P., (1975), "Organisational Learning under Ambiguity", *European Journal of Policy Review*, 3, 2, pp 147-171.

DAFT, R.L., WEICK, K.E., (1984), *Toward a Model of Organisations as Interpretation Systems*, *Academy of Management Review*, 9, pp 284-295.

SENGE, P., (1990), *The Fifth Discipline: The Art and Practice of the Learning Organisation*, New York, Doubleday.

HUBER, G.P., (1991), "Organisational Learning: The Contributing Processes and the Literatures", *Organisation Science*, 2, pp 88-115.

MARCH, J.G., (1991), *Exploration and Exploitation in organisation learning*, *Organization Science*, 2, pp 71-87.

WATKINS, K.E., MARSICK, W.J., (1993), *Sculpting the Learning Organisation*, San Francisco, Jossey-Bass.

NONAKA, I., TAKEUCHI, H., (1995), *The Knowledge Creating Company*, Oxford, England, Oxford University Press.

2. INDIVIDUAL LEARNING THEORIES.

Psychological theory provided the definition of individual learning. The concept of learning may be more difficult to define than is generally expected. S Klein (1996)¹²⁷ defined it as being: “ an experiential process resulting in a relatively permanent change in behaviour that cannot be explained by temporary states, maturation or innate tendencies ”. It is recognised by most of the authors that behaviour may be transformed without any learning occurring and that learning may occur without any transformation of the behaviour. Though a strong relation is supposed to link the two, their simultaneous occurrence does not mean that one is the consequence of the other. This ambiguity gave the birth to the two major theoretical approaches, behaviourism and cognitive psychology, which try to explain the nature of the learning process. They are developed below in order to evaluate their interest for this research.

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These two research streams adopt a different perspective on learning. Whereas behaviourism defined learning as a reaction to the environment, cognitive psychology adopts an analytical perspective of cognition. This second stream focused on the changes in representations and knowledge and of their influence on behaviour. Given its importance in the current development of organisational learning, the second stream deserves to put the emphasis on the concepts resulting from its work.

2.1. LEARNING FROM THE BEHAVIOURIST PERSPECTIVE.

Behaviourism approached learning as a change in behaviour induced by a modification of the environment. This transformation, defined as a stimulus, would generate specific response behaviour. According to the most influential drive theory of C. Hull (1943)¹²⁸, behaviour may be predicted by a model made up of four groups of variables comprising internal and external forces. The repetition of given stimuli generate learning by memorisation of the appropriate behaviour. Concept of conditioning underlined that the environmental variable induced entirely individual behaviour. From this perspective, individual motivations and knowledge

¹²⁷KLEIN, S.B., (1996), Learning: Principles and Applications, Mac Graw Hill, Third Edition.

¹²⁸HULL, C., (1943), Principles of behaviour, New York, Appleton, Quoted in Klein, S.B., Op Cit, p 31

are not included in the investigations. The antecedents of a situation previously encountered will generate an answer acquired during previous experiments.

As a consequence of these choices, behaviourist theory investigated conditions that generated, reinforced or prevented an expected behaviour over a given period. It is possible to measure learning through two broad categories of variables, the nature and the frequency of the occurrence of stimuli and the speed of the behavioural answer. Behaviourism concludes to learning when individuals have a faster reaction to repeated stimuli. This initial approach produced many results through multiple and well-known experiments.

However, due to the initial choice of considering the respondent as a « black-box », behaviourism did not produce an in depth insight into the learning mechanisms. First, experiments measured the physical responses to variations in the environment, although it must be stated that most human learning does not involve physical responses. Second, occurrence of learning is entirely dependent on the environment. Each variation of the context will generate an adaptive behaviour, which is memorised and added to the stock of potential responses. By relating closely the input (the environment) and the output (the behaviour), behaviourist model avoids introducing the concept of representations. By doing so, it makes the implicit assumption that different potential reactions do not interact to give unexpected behaviour. Stretched to the extreme, this reasoning would mean that the building of cumulative knowledge is impossible, as in the use of existing knowledge for the creation of new and efficient artefacts.

Behaviourist model presents a limited interest in turbulent economic contexts, which imply a constant change in production. As Weill-Barras (1993) ¹²⁹ said : “The change in society invalidated behaviourist approach of the learning man (the individual that makes a fast and accurate gesture in response to the context). This perspective, closely related to the Taylorian approach of production, became almost obsolete. ”. The progress of psychological theory, influenced amongst other factors by the emergence of computers, the change in production models and more broadly by the social context, supported a second research stream, which focused on the brain capacities and on their influence on individual behaviour.

¹²⁹ WEILL-BARRAS, (1993), *L'homme cognitif*, P.U.F., Paris, pp 419

2.2. LEARNING FROM THE COGNITIVE PERSPECTIVE.

For the 60's, the cognitive perspective weakens the basis of the behaviourist stream. It emerged significantly. Multiple experiments justify the adoption of another conception of learning. Broadly speaking, cognitive psychologists stated that learning results from the cognitive capacities of the brain which are the discrimination and the identification or memorisation of information. By doing so, they renounced the simple stimulus-response approach and stated that cognitive activity is the essential determinant of any response.

Two major authors opened the way to this new paradigm. Tolman (1932)¹³⁰ asserted that the occurrence of two simultaneous events could induce learning, which can happen without any gratification or punishment. In two well-known experiments, he demonstrated that behaviour was due to an individual choice based on a mental model of the environment rather than being the result of an association stimulus-response. Therefore, the understanding of the individual behaviour entailed understanding the mental models that supported the choices and actions. Tolman's experiments (1932) demonstrated that the object of learning is not behaviour itself. The cognitive perspective focused on the knowledge, which leads behaviour, as the main object of research on learning.

Similarly, J. Piaget (1970)¹³¹ asserted that what matters is not the stimulus itself, but the sensitivity to the stimulus: “ the activation of a given answer by a stimulus requires beforehand that the individual and its organism could provide it. Thus, the preliminary question is the one of capacity, which corresponds to what Waddington called competency.....At the beginning, it is not the stimulus but the sensitivity to the stimulus that is conditioned by the capability to provide an answer.”. In other words, empirical experience alone cannot support the understanding of learning. The existing interpretations of the reality will induce the sensitivity to a stimulus. By doing so, they will influence and constrain the

¹³⁰TOLMAN, E.C., (1932), Quoted in Klein, S.B., (1996), Learning: Principles and Applications, Mac Graw Hill, Third Edition.

¹³¹PIAGET, J., (1970), L'épistémologie génétique, P.U.F., Paris, pp 63

possibility to learn. As stated by P. Richard (1998)¹³²: “knowledge is not built from nothing. This building entailed the existence of previous knowledge”.

This change of paradigm clarifies the cognitive position. As underlined by Weil-Barras (1993)¹³³, it focused on: “the behavioural changes but also on the internal modifications that induced and supported this change. Such a perspective highlighted that the changes in behaviour were correlated to changes in the representations of the situations. The experiments of the cognitive school validated this assumption even in the case of sensorimotor learning, previously described as dissociated from any cognitive representation.”. As a consequence, the sole statement of the changes in behaviour cannot support the identification and measure of learning. It is possible to conclude that learning takes place when the behavioural change corresponds to a modification of the representations and of the cognitive schema previously used.

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Because the definition of organisational learning requires the use of concepts developed by the cognitive perspective, main conclusions and findings have to be reviewed. Then these results will support the introduction of the organisational learning theories.

2.3. MAIN FINDINGS OF COGNITIVE PSYCHOLOGY.

Due to its major contribution towards cognitive development, J. Piaget (1970, 1974) is well recognised nowadays. His work has been adopted and enriched by many authors such as Weill-Barras (1993), S.B. Klein (1996), B Schwartz and D Reisberg (1991), J Anderson (1995), J.F. Richard (1998) et Bastien (1993, 1997)¹³⁴. These authors supported the review of

¹³²RICHARD, J.F., (1998), *Les activités mentales: comprendre, raisonner, trouver des solutions*, Armand Colin Eds, Paris, pp 136.

¹³³WEILL-BARRAS, A., (1993), *L'homme cognitif*, P.U.F., Paris

¹³⁴RICHARD, J.F., (1998), *Les activités mentales: comprendre, raisonner, trouver des solutions*, Armand Colin Eds, Paris.

KLEIN, S.B., (1996), *Learning: Principles and Applications*, Mac Graw Hill, Third Edition.

BASTIEN, C., (1993), “Apprentissage: modèle et représentation”, in Le NY, J.F., *Intelligence naturelle et intelligence artificielle*, P.U.F., Paris.

BASTIEN, C., (1997), *Les connaissances de l'enfant à l'adulte: organisation et mise en oeuvre*, Armand Colin Eds, Paris.

SCHWARTZ, B., REISBERG, D., (1991), *Learning and Memory*, Norton and Compagny Eds, New York.

ANDERSON, J., (1995), *Learning and memory: an integrated approach*, WILEY and SON, New York.

the main concepts of cognitive psychology linked to learning.

Cognitive psychology renewed the definition of learning by focusing on the change in knowledge that is required to support the change in behaviour. In this perspective, the individual learns that his behaviour generates both a gratification or a dissatisfaction. Similarly, he also learns that his behaviour results in changes in the contexts. This learning ensued from the individual perception of the context and of his behaviour. As stated by Weill-Barraï (1993)¹³⁵: “What governs behaviour is the result of both the context and its interpretations that result from the previous individual experience. The combination of these two sources of information induces individual activity placed in a given context. This means that the individual, according to his past experience, interprets the context or the situations. In most cases, this interpretation supports the behaviour”. Thus the object of research on learning is no longer the measure of the reactions to environmental changes. The main research topic becomes the investigations of the ways used by the individual to build, test and memorise the representations of the environment that will support behaviour. As underlined by Piaget (1970)¹³⁶ for the perceptions of the body by a child: “Though the purely observable events are simple movements or change of state, they already are structured by multiple relations as soon as they are perceived and moreover when they are generalised into laws. This requires a constant operative activity from the individual.”. Understanding learning entails understanding the transformation of the individual’s capital of knowledge acquired by the activities of experimentation, memorisation and inference. Thus, the way cognitive psychology described this process can support a close understanding of the learning mechanisms.

This individual knowledge is related on the one hand to the objects, the concepts and categories, and on the other hand to the actions, characterised by a process and a result. This first distinction results in two concepts of knowledge clearly separated in cognitive psychology. First, declarative knowledge refers to the concepts of categories. Second, procedural knowledge refers to the actions. The authors often refer to this knowledge as declarative knowledge and to know-how as procedural knowledge. Knowledge related to an object, such as a bicycle or a computer (a description of the object, of its components, of

¹³⁵WEILL-BARRAS, A., (1993), *L’homme cognitif*, P.U.F., Paris, pp 311

output produced), is definitely distinct from that which supports its use (learning the balance, use of a word processor).

Due to this difference, it is impossible to deduce one of these categories from the other. Weill-Barras (1993)¹³⁷ provided the example of the square. The declarative knowledge of the property of a square (four equal sides) does not provide the method required in order to calculate its perimeter. This operation entails the previous acquisition of the addition or of the multiplication and the identification of this problem as requiring one of those two procedures. The procedural knowledge cannot be directly deduced from the properties of the square. Though they refer to the same square, the declarative and procedural knowledge do not contain the same information. Moreover, these two forms of knowledge are acquired by two distinct procedures. This distinction leads to two separate fields of investigation that must be reviewed separately.

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2.3.1. Declarative knowledge.

Declarative knowledge is stored in the long-term memory. Because declarative knowledge is structured in the memory in schemes, learning results in the modification of the structures of the knowledge. As stated by Richard (1998)¹³⁸ the schemes “do not relate to the intrinsic properties of the objects themselves. They refer to the contexts where those objects are encountered and used, when the context is frequent enough to be memorised.”. These schemes are abstract and general structures. They contain general variables that characterise a generic situation. When the contextual data extracted from the specific situation replaces the general variables, the understanding of a specific context is achieved. By relating the available data, the carrying out of the scheme to the situation entails the interpretation of the data and by doing so, the inference of the existence of hidden information. The interpretation of a situation is made up of the recognition of an existing scheme that provides sense to the flow of data resulting from any situation. Interpreting an event means identifying and applying a memorised scheme.

¹³⁶PIAGET, J., (1970), *L'épistémologie génétique*, P.U.F., Paris, pp 102.

¹³⁷WEILL-BARRAS, A., (1993), *L'homme cognitif*, P.U.F., Paris, pp 438.

¹³⁸RICHARD, J.F., (1998), *Les activités mentales: comprendre, raisonner, trouver des solutions*, Armand Colin

The example of the scheme “consultation” illustrates this point. This scheme refers to situations where the individual expects the advice of an expert, who may be a doctor, a dentist or a surgeon. Each time the individual interprets data as belonging to this situation, he will behave and think according to what he previously learnt from these situations.

Therefore it is easy to understand that the schemes have a major influence on the way the individual sees and analyses the situations. Schwarz and Reisberg (1991)¹³⁹ demonstrated, by the simple experiment of the memorisation of a set of figures, that the interpretation had a major influence on the memorisation capacity. The schemes explain why it is possible to read ambiguous letters or to understand unreadable words. The memorised schemes condition how the individual may identify and analyse a data. They will provide the sense to the encountered events by relating them to existing structures. From this perspective, the knowledge, structured in the long-term memory as schemes will condition the integration of new knowledge. As stated by Kim (1993)¹⁴⁰: “Mental models represent a person’s view of the world, including explicit and implicit understanding. Mental models provide the context in which to view and interpret new material, and they determine how stored information is relevant for a given situation”.

Rumelhart et Norman (1978)¹⁴¹ described the creation of declarative knowledge as resulting from a categorisation process¹⁴². Faced with a new object or concept, the individual will make a set of inferences based on the category previously memorised. The confirmation of these hypotheses will induce the integration of the object or concept into an existing category. The

Eds, Paris, pp 70.

¹³⁹SCHWARTZ, B., REISBERG, D., (1991), Op Cit, pp 325.

The authors described the following experiment realised by the German psychologist George Katona. Its purpose is to measure the memorisation of the following set of figure: 1 4 9 1 6 2 5 3 6 4 9 6 4 8 1 1 0 0. It is observed that the exercise generates an important rate of failure until the experimenter revealed a scheme that will support the interpretation: 1,4,9,16,36,64 etc..... The understanding of the scheme of a square progression facilitate its memorisation and the fulfilment of the exercise.

¹⁴⁰KIM, D.H., (1993), “ The link between individual and organizational learning ”, Sloan Management Review, Vol 35, n°1, pp 39.

It may be noticed that J F Richard underlined the ambiguity of the expression “mental model”. Some authors used “mental models” when other prefer the word “representation” or even “knowledge”.

¹⁴¹RUMELHART, D.E., NORMAN, D.A., (1978), Accretion, tuning and restructuring: three mode of learning ”, Quoted in J.F. RICHARD, (1998), Op Cit.,pp 146.

¹⁴²Related to this topic see the experience of Levine, M., (1966), Hypothesis behaviour by humans during discrimination learning. Journal of Experimental Psychology, 71, pp 331-338, Quoted in Klein, S.B., (1996), Op Cit, pp 365.

disconfirmation will lead to the modification of the category's characteristics or will even result in the creation of a new category. In this last case, the variables of the category will be made up of the perceived characteristics of the new object or concept. It will be linked to the other categories and memorised. The nurturing of the category will be done using the same process.

From the cognitive perspective, Rumelhart et Norman (1978)¹⁴³ concluded that learning took place when there was a modification of knowledge, which can occur at three different levels. Learning may arise when there is an enrichment of the existing schemes through the integration of new elements. But it is also possible to conclude that learning takes place when there are adjustments or refinements of the existing frames. Finally learning is bound to occur each time new frames are created. This third kind of learning will generate a more complex cognitive activity than in the previous one. Organisational learning theories will maintain this distinction by speaking of single loop or double loop learning but in another form.

J.F. Richard (1998) underlined the difficulty or the impossibility of the transfer of schemes from one individual to another. Schemes are complex objects, built with the elementary units that are concepts and actions, and rely to general schemes. This results in the difficulty of transferring knowledge from one individual to another. Because individual experience and previous learning conditions the schemes, such a transfer would entail on the one hand that the individual could be conscious of all of them, and, on the other hand that the individual experience could be entirely transferred. Moreover, the previous developments demonstrated that the use of what has been learned previously by the individual conditioned the reception of this knowledge.

It can be deduced from this point that the convergence of the perceptions of two individuals on the same topic is impossible to achieve totally. Because the convergence in the interpretation of new situations will rely on the diversity and singularity of the individual experience, and therefore on the diversity of the interpretative schemes, one can conclude that there is a potential heterogeneity of interpretations of the same event. These statements lead to the conclusion that the creation of shared knowledge for a given question entails an important

¹⁴³RUMELHART, D.E., NORMAN, D.A., (1978), Accretion, tuning and restructuring: three mode of learning ”,

sum of communication and effort, supported by a clear will to achieve a common point of view. *Given the nature of declarative knowledge, anchored in individual experience, one must state that divergence in interpretation is the norm and that convergence must result from an intentional effort.* This conclusion is of prime importance for the learning organisation, as will be developed later.

All the authors have separated declarative knowledge, stored in the long-term memory, from procedural knowledge. By acting on his environment, the individual will encounter unsolved problems. The existing declarative knowledge will be of no use in providing an appropriate answer. The understanding of the problem-solving heuristics have revealed the nature of procedural knowledge.

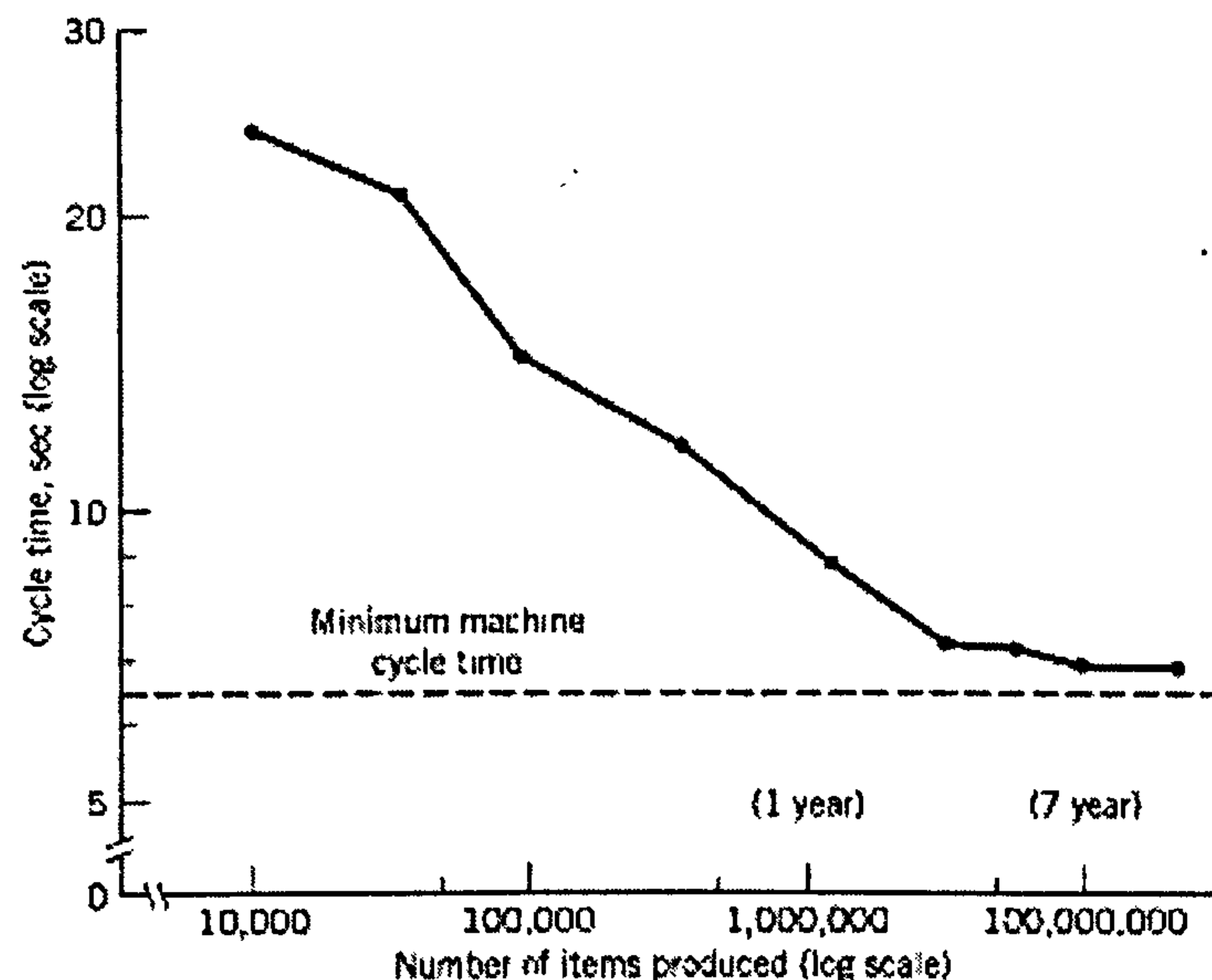
2.3.2. Procedural knowledge.

Almost all authors underlined that this field has been less explored than that of declarative knowledge. The achievement of tasks when they require a problem-solving dimension will generate new acquisitions. This provides the definition of procedural knowledge. These acquisitions correspond to the development of competencies or know-how that will provide more efficiency during the repetition of similar tasks. The result of the development of procedural knowledge is well known by authors in management. It takes the forms of learning curves. From the same perspective as the initial work realised in aeronautics, Crossman (1954)¹⁴⁴ highlighted the experience effects in the production of cigars as developed in figure n°12. These figures demonstrated that the production time of a unit decreases with experience, this resulting in the increase in the productivity. The author revealed that this time reduction will be possible through successive learning until the worker has saturated the possibilities of his equipment

Figure n°12: Time to produce a cigar as a function of amount of experience.

Quoted in J.F. RICHARD, Op Cit., pp 146.

¹⁴⁴CROSSMAN, E.R.F.W., (1959), " A theory of acquisition of speed skill ", Ergonomics, 2, pp 153-166.



One of the main properties of declarative knowledge is that it is closely linked to the context of its acquisition. Thus, it is difficult to transfer when conditions change. As highlighted by P Richard (1998), the constitution of know-how relies on the progressive disappearance of the representations that are no longer used in the exercise of competence. The routinisation of behaviour provides an increase in the completion speed of the tasks that disengages cognitive capacity. During the exercise of tasks, cognitive activity is made up of the categorisation of the encountered problem, or in other words, of its recognition. A behavioural response is then automatically developed. In this case, the completion of the task does not trigger any problem-solving heuristics.

The counterpart in this economy of cognitive activity appears as soon as it is necessary to transfer or to share the know-how acquired by the individual. Because the actions are accomplished without using any representation, it is impossible to explain clearly what is done and the reason why it is done. The example given by Nonaka and Takeuchi (1995)¹⁴⁵ on the transfer of procedural knowledge in the design of kneading machines gave a clear illustration of this problem. In 1984, the Matsushita Company decided to create a home-kneading machine. Due to the first deceptive results, it was decided that an R&D engineer would analyse the know-how of a well known baker. The overall purpose was to reproduce this

¹⁴⁵ NONAKA, I., TAKEUCHI, H., (1995), *The Knowledge Creating Company*, Oxford University Press.

know-how in the machine. Though he worked through observation, imitation and practice, the initial trials of the engineer were very discouraging. He could not reproduce the same results. Because the know-how of the baker was tacit, it was impossible for him to explain the difference in results between himself and his observer: "After many attempts, the engineer was able to produce satisfactory results and to transmit her know-how by the use of mental images. She transmitted this by using such expressions as "limber up by twisting". Such an expression provided a mental draft of the kneading that suggested the shape, the strength and the speed of the propeller. She said "make the propeller stronger" or "faster" so that the other R&D engineers could adjust the specifications of the machine by successive trial and error.".¹⁴⁶

This example highlighted that procedural knowledge supports the achievement of very complex tasks without using declarative and more explicit knowledge. As Anderson (1995)¹⁴⁷ stated : "people can learn to perform skills without being able to say what they have learned ". In this case, it is possible to speak of tacit knowledge that may be understood as an automatism embedded in the individual experience, intuitions and impressions. Due to this characteristic, they are difficult to transfer and their sharing require the implementation of multiple learning strategies. More than the importance of the definition and the nature of this knowledge, these statements emphasised the importance of the creation, diffusion and sharing of knowledge.

2.4. LEARNING AS A CREATION OF KNOWLEDGE.

As stated by all the authors, the distinction between declarative knowledge, being the long term memory, and procedural knowledge, being the competencies or expertise, generates very differentiated learning strategies. The research focused on declarative knowledge will analyse the coding and storage of the data, the structure of the memory and the way the information is retrieved. The investigations into procedural knowledge would focus on problem-solving activities. By initiating actions in his environment, the individual will have to face problems. Their resolution will generate learning.

¹⁴⁶ NONAKA, I., TAKEUCHI, H., (1995), Op Cit., pp 125.

¹⁴⁷ ANDERSON, J.R., (1995), Op. Cit. pp 309

The routes of individual learning are multiple. The main pattern usually developed through psychological theory are the imprint, habituation, associative learning (behaviourist learning by conditioning), action learning, the learning by observation, co-active learning and learning through instructions. Three of these categories appeared to be relevant for organisational learning and will be extensively described. They are action learning, learning by observation and imitation and co-active learning. First, they correspond to learning that is done collectively, which is the most common situation within companies. Moreover, many authors investigating the learning organisation observed those three ways directly or indirectly¹⁴⁸. As an example, Nonaka and Takeuchi (1995) provided in depth observations of learning by imitation and observation in order to explain the transfer of tacit knowledge. Similarly, Argyris and Schön (1996)¹⁴⁹ identified learning by doing as one of the sources of organisational learning. Finally, co-active learning refers to the process of acquisition of knowledge that occurs within groups by confrontation of diverging points of view. Each of these ways of learning will be described and the implication for organisational learning will be developed.

2.4.1. Action Learning.

Action learning refers to all the kinds of learning that can find their origin in individual action. Polanyi (1958)¹⁵⁰ highlighted that human beings acquire knowledge by creating and actively organising their own experiences. Similarly, Piaget (1974) underlined that children recognise the similarities of the physical and social world by manipulating objects. This way of acquiring knowledge has been opposed for a long period been opposed to the classic forms of learning based on the transfer of declarative knowledge, which benefited from the advantage of being objective and independent of the individual. The research previously quoted demonstrated that action learning entails the building of representations of situations. This justifies the recognition of this form of learning by the cognitive approach.

¹⁴⁸ Weill-Barras developed the other forms of learning in its chapter devoted to the forms of learning.

¹⁴⁹ ARGYRIS, C., SCHON, D.A., (1996), *Organizational Learning II: Theory, Method and Practice*, Addison-Wesley Eds.

J.R. Anderson (1995)¹⁵¹ proposed a process of acquisition of knowledge based on three main stages: cognition, associative and autonomous stage. According to this author, the cognitive stage is the one of problem-solving. Faced with new situations, the individual must initiate solutions: “The field of problem solving research is concerned with how people go from some initial declarative knowledge about a problem domain, to their initial solutions of problems in that domain.”. Problem solving is a process that consists of the definition of the initial state, then of its desired final state and then of the research of the operations that will provide the transformation to the final state. In the case of badly defined problems, their breakdown into many sub-categories will facilitate the qualification of the situations. The problem-solving process means the building of knowledge specific to a given situation that will support the resolution of the encountered problem. Klein (1996)¹⁵² underlined that the problem-solving strategies are made up of six different strategies like be the use of heuristics or that of means-end analysis. He also revealed the importance of the experience and previous learning. For example, it is difficult to give another function to an object that has been used for the solving of a specific problem. The resolution of a problem is described as supporting the emergence of competencies. Competence is the ability to solve a given problem, stored in the long-term memory and which has been learned through a problem-solving process.

The second stage of action learning is the associative one. During this stage, the attention is no longer focused on the problems themselves and on the operations that provide solutions. This stage is made up of the categorisation of the rules of the application of competencies. These rules are at the core of the expertise of the individual. Numerous experiments, described by Anderson (1995), demonstrated that expertise relies on the acquisition of numerous rules that will accelerate the interpretation of the situations and therefore will facilitate the choice of efficient responses. The observation of exceptional individuals led by Hayes (1985)¹⁵³ revealed it was necessary to accumulate these rules for more than ten years in order to provide outstanding performance in whatever domain of expertise.

¹⁵⁰ POLANYI, M. (1958), *Personal Knowledge*, Chicago, University of Chicago Press.

¹⁵¹ ANDERSON, J.R., (1995), *Op. Cit.* pp 320

¹⁵² KLEIN, S.B., (1996), *Op Cit* pp 373. The six strategies described are the use of algorithms, heuristics, working backward, means-ends analysis, representativeness and availability.

¹⁵³ HAYES, J.R., (1985), *Three problems in teaching general skills*, in J.R. Anderson, (1995), *Learning and Memory*, J Wiley Eds.

The third stage is called autonomy because competencies are delivered automatically. In this stage, the responses to a problem occur but without any cognitive activity linked to a problem-solving or to the learning of the application of rules. Because the execution of actions do not require specific attention, one can speak in this case of routinisation. Anderson (1995) emphasised the economy of attention that results from this process. This cognitive activity is available to other kinds of tasks. However, the counterpart is the impossibility to interrupt the task and to the difficulty of transferring the knowledge resulting from the expertise. In these two cases, the transmission to other individual entails coming back to the representations that allowed the exercise of this competence. This return to an intense cognitive activity will require a strong investment in attention and time that will break with the automatisisation of routinised behaviour.

These research demonstrated that action learning supports the building of declarative knowledge, induces the memorisation of the rules of application and will, at the end of the process, allow the routinisation of the behaviour. By doing so, action learning supports the creation of competencies that will be efficient in the specific contexts in which they were created. This definition of action learning provides an interesting theoretical frame that could guide and support the analysis of learning at the level of the organisation. As an example, this research seemed to fit with the concept of organisational routines used by many authors in the Economics field. They provide the possibility of analogies between organisational and the individual routinised behaviour.

Moreover, this theoretical framework seems to be relevant for the understanding of the process by which individuals in the organisation may innovate and create new procedures for production of products and services. Because innovation means the building of new responses to changing situations, it may be hypothesised that the action learning process supports the innovative purpose. Problem-solving heuristics should support the establishment of new declarative knowledge, the identification of the rules of application and finally the routinisation of new behaviour.

However, the adoption of action learning concepts on the collective scale remains to be validated. Weill-Barras (1993) underlined that the individual perspective must be considered as one of the limit of the cognitive approach. From such a perspective, the analysis excluded

the social and cultural dimensions. As a consequence, the exploration of the links between the individual and the collective learning remains to be done. The models of observation and imitation learning and that of co-active learning provided further explanations of these links.

2.4.2 Observation and Imitation Learning.

Most of the psychological theories on learning adopted the perspective of an isolated individual, learning by himself under the constraint of a non-relational environment. However, it must be stated that the relations between individuals and more broadly the social context have a great influence on most of the learning. This remark is particularly relevant for the firm's context where the individual is rarely in situation to act and decide without any interaction. The observation and imitation learning theories relates from this statement.

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Bandura (1980)¹⁵⁴ named this learning by observation “vicariant learning”. Numerous definitions of this learning have been provided. Their common assertions are to highlight that the behaviour of the imitated model is not influenced by the observation of the imitator. Weill-Barras (1993) proposed the definition of F. Winnikamen (1990)¹⁵⁵ whereas observation learning refers to “the correspondence between the behaviour of two individuals, when this correspondence results from the possibility provided to one of them (the imitator) to observe the other (the model)”. Some authors made the distinction between observation learning or modelage and imitative learning. In the case of modelage, Bandura (1980) asserted that the individual extracts from the observation of the model, general rules he will use for his own action. In the case of imitation, there would be a strict imitation of the observed behaviour. From the two perspectives, the observation of the other's behaviours is understood as the source of information used to achieve a given purpose. The observation of a gap between given behaviour and its imitation by another individual supports the hypothesis that a mental representation will lead to future behaviour. According to the cognitive perspective, it is therefore possible to conclude that learning is taking place in this case.

Imitation learning may play a recognised influence in the transfer of tacit knowledge. The

¹⁵⁴BANDURA, A., L'apprentissage social, Bruxelles, Mardaga Eds, Cité par Weil Barraïs, Op Cit, pp 463.

¹⁵⁵WINNIKAMEN, F., (1990), Apprendre en Imitant, Paris, P.U.F, Cité par Weil Barraïs, Op Cit.

example previously developed of the design of the kneading machine, illustrated its interest for innovation. Nonaka and Takeuchi (1995) described the transfer of the baker's tacit knowledge to an R& D team. In that case, observation was the sole possible process of learning. Because it was impossible to transfer an explicit body of instructions, the R&D engineer decided to observe and reproduce the baker's ways of doing what he did until a satisfactory result was achieved. By doing so the engineer created her own representations of the process and was able, by mental images to conduct the design of the machine. The learning process described by F Winnikamen (1990)¹⁵⁶ is perfectly described. There is an asymmetric situation where one of the individuals observes the other before developing actions. In the case described by Nonaka and Takeuchi (1995), the R&D engineer established a long-term relationship with the baker. She worked by observation and imitation until she obtained a similar result. It may be noticed that this kind of learning entails a personal relationship that involves the will to share know-how.

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Observation and imitation learning appeared to be very efficient to analyse the transfer of the tacit knowledge that is poorly verbalised and formalised. Nevertheless, he described the sole case where the imitator is able to reproduce an existing model. This way of learning does not describe the entire learning situations. For example, this approach does not integrate the cases where interactions between the model and the imitator transform the model's behaviour. Similarly, this approach does not relate to the situations which entail a problem-solving process. Psychosociology developed many models that could be relevant for these cases. Through multiple laboratory experiments, they built the concept of coactive learning.

2.4.3. Co-active Learning.

The concept of co-active learning refers to situations where cognitive development is linked to social interaction. Mainly nurtured by the psychosociological stream, its central assertion is that social relations have a major influence on cognitive development. Doise et Mugny (1997)¹⁵⁷ asserted that the inclusion of social interactions in learning improved its

¹⁵⁶WINNIKAMEN, F., (1990), Op Cit, pp 15

¹⁵⁷DOISE, W., MUGNY, G., (1997), Psychologie Social et Developpement Cognitif, Armand Colin, Paris, pp 207.

understanding: “It has been demonstrated many times that the cognitive development of children is strongly influenced by the social interactions they participate in. This interdependency induces a shared cognitive building, a co-ordination of the schemes that created cognitive competencies. Such building is strong enough to nurture future individual development”. Similarly, Weill-Barras (1993) underlined the positive effect of collective situations on learning. Though it has been validated in laboratory contexts, through simple problem-solving processes, psychosociology contributed mainly to the understanding of the learning theories.

Moscovici and Doise (1992)¹⁵⁸ established the link between the individual and the group by the concept of socio-cognitive conflict. As it has been previously reviewed, the property of declarative and procedural knowledge led to the divergence in individual interpretations of the situations. This means that in the same situation, two individuals will be sensitive to different aspects of the situation. They will produce diverging analyses and inferences. As a consequence, social interaction will create the confrontation of those diverging perceptions. Moscovici and Doise (1992) defined the cognitive conflict as follows: “(the socio-cognitive conflict) arises when many alternative ideas, related to the same dilemma, are simultaneously proposed. They are alternatives only when they intend to answer to the same quest for a solution formulated in very similar terms. The conflict becomes social when each alternative is designed and publicly argued by a member external to the group that has to solve it.”. By describing the processes of transformation of the individual’s perceptions, the authors stated that their active participation in the debates created new representations. The oral confrontation of diverging point of views leads the individual to building new representations that will be used in order to take collective decisions. Moreover, the authors underlined that the individuals that must face socio-cognitive conflicts develop more complex and better-organised cognitive structures.

Doise et Mugny (1997)¹⁵⁹ highlighted that the levels of cognitive activity developed during interactions are richer than the one achieved by isolated individuals. This entails a greater diversity of interpretation of the situations, a better internalisation of the schemes produced

¹⁵⁸MOSCOVICI, S., DOISE, W., (1992), *Décision et consensus: Une théorie générale des décisions collectives*, Paris, P.U.F., pp 244.

¹⁵⁹DOISE, W., MUGNY, G., (1997), *Op Cit*, pp 72-73

during interaction and eventually a larger scope of potential choices and decisions. They summarised the multiple experiments by saying that individual learning carried out within a group is more efficient than the one realised by isolated individuals.

The specific situation of collective interactions suggested that the group's composition and functioning must influence the learning result. First, it was demonstrated that the diversity of the competencies associated in the group influenced the production of learning. When a homogeneous group produced poor results, the experiments that mixed different levels of expertise achieved better results. In the latter case, it was demonstrated that both high and low level individuals made more progress than in the case of homogeneous levels. Second, the authors underlined that a lot of research demonstrated that the lack of co-ordination within the group induced a decrease in the level of learning. The experiments that imposed a strong hierarchic structure on a group revealed that the output was more dependent on individual competencies. Because isolated learning appeared to be weaker, the production of new representations in such situation led to lower performances. Not surprisingly, and through the same mechanism, the deletion of verbal communication affected negatively the building of collective and co-ordinated representations.

The explanation of these different statements reinforced the interest in socio-cognitive conflict and led Ames and Murray (1982)¹⁶⁰ to assert that: "the social interaction is productive only when it induces a confrontation between the diverging solutions produced by the individuals". It observed a decrease in performance each time the occurrence of an avoiding behaviour prevented the social interactions. This is the case when an individual dominates the group. The effect is comparable when a systematic uncritical attitude prevents the occurrence of cognitive conflicts. The group heterogeneity, by multiplying such kinds of occurrences will increase the confrontations of diverging solutions. Similarly, the adoption of short hierarchic structures, which are supposed to facilitate verbal communication, will support the emergence of cognitive conflicts and by doing so will enrich the final representations.

From this perspective, knowledge or representations are built collectively by successive contradictions and by the confrontation of diverging point of views. The dynamics of learning

¹⁶⁰AMES, G.J., MURRAY, F.B., (1982), "When two wrongs make a right: promoting cognitive change by social

are directly linked to those of the group and/or of the organisation. The research led by the authors demonstrated that the representations, which are built by each individual, are closely linked to the issue of socio-cognitive conflict. Thus, the structure of the groups, their hierarchic structures and the rules they adopted strongly conditioned the occurrence of debates within the group, the nature of the participation, the possibility of a verbal exchange and the willingness to design solutions that could integrate the diverging propositions. Similarly, the investigations into the polarisation phenomenon¹⁶¹ revealed that the group could influence the representations of each of the individuals.

It is therefore necessary to move from the individual to organisational learning. As stated by Moscovici and Doise (1992), “each participant, after having thought of speaking about the same problem, after having argued about the different solutions, comes to the adoption and interiorisation of the pertinent representations. Therefore his attitudes and judgements will be adjusted to this frame of reference so that each member of the group can share the same interpretation. In this way, psychosociology takes over from the individual psychology.” From this perspective, individual learning is the result of the social links that relate each of them to the others. This statement leads to the conclusion that learning is to a great extent conditioned by organisation. This statement entails the integration of social contexts into the research on learning. It opens up the way to the building of a theoretical framework that links organisation and learning. This conclusion leads reviewing organisational learning literature. Before this, we intend to summarise the results of our investigations on individual learning.

2.5. THE INDIVIDUAL LEARNING CYCLE

We have reviewed the main aspect of individual learning, involving both experiential and cognitive dimensions. We would like to present now the model of individual learning, which explains durable change of behaviours. According to the previous statements and a review of the Lewinian theory of learning, Kim (1993)¹⁶² proposed the OADI-IMM learning cycle as

conflicts”, *Developmental Psychology*, 74, pp 642-655, Quoted by Doise and Mugny (1997), *Op Cit.*

¹⁶¹The authors used the concept of polarisation when it is possible to state that the positions adopted by the group are more extreme than the one adopted by the individuals.

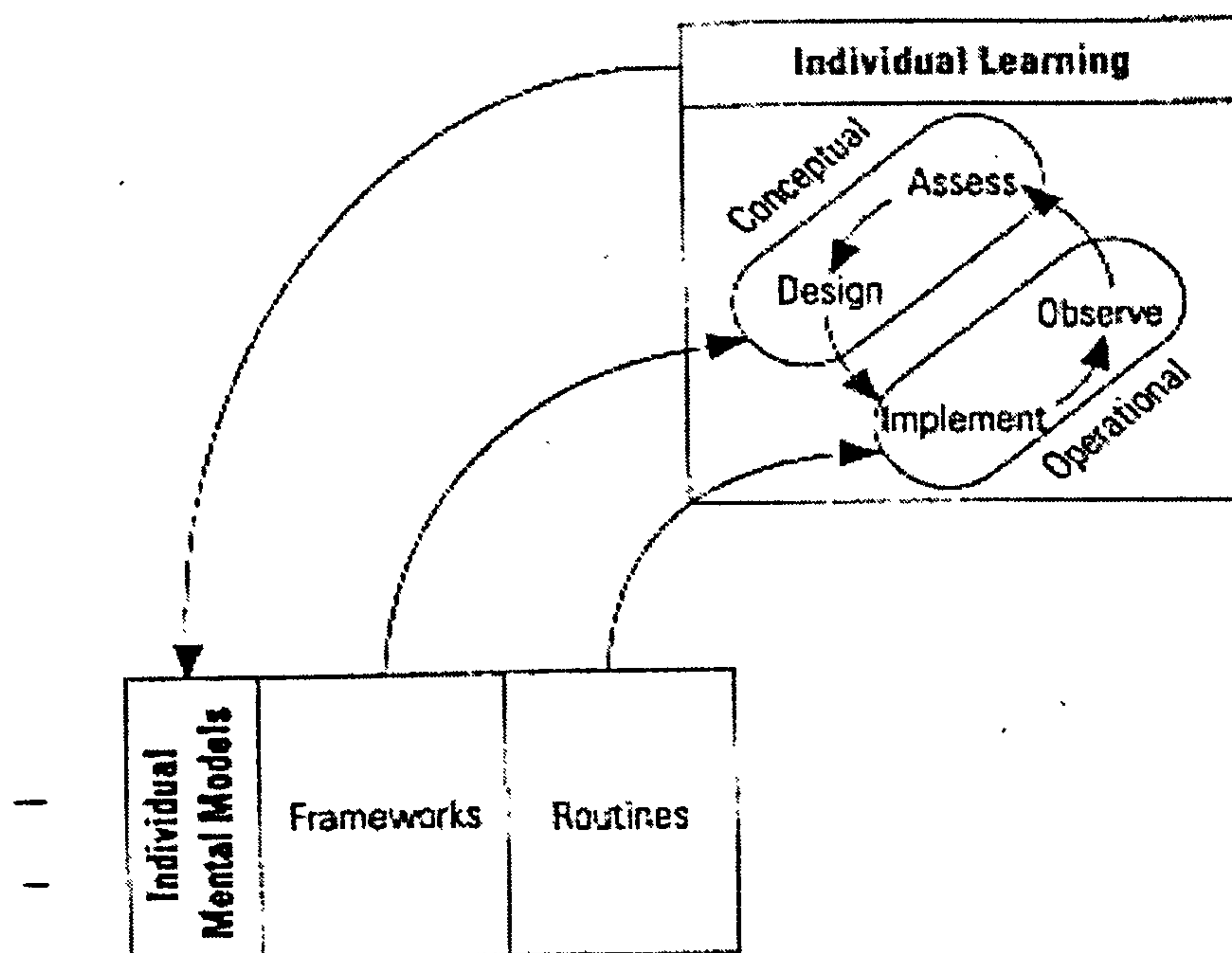
¹⁶²KIM, D.H., (1993), “The link between individual and organisational learning”, *Sloan Management Review*, pp 37-50.

described in figure n°13.

This model integrates the two components we reviewed previously. The first part of the model develops the way an individual learns in a cycle. This is the Observe-Assess-Design-Implement part of what could be called an experiential model. By implementing actions in their environment, observing the results, assessing the underlying model of the observed results and designing a new action, the individual may match the experience and assessment of reality. This means that a learning cycle has happened when both action and representation have changed in order to balance results and the expectation of those results.

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Figure n°13: The Kim O.A.D.I Cycle of individual learning.



The second part of the model is required to integrate the frameworks. In Piaget's and cognitive vocabulary, these schemes are the global frames through which we perceive and give sense to the situations that we have to face. As a consequence of previous experience, the framework of these abstracts will help to recognise the existing category to which the situation refers. By doing so, the individual is able to understand and to give sense to the situation. In so doing, the previous successful experience will condition the building of an appropriate answer. The model suggests that the assessment of situations is impossible without existing frameworks.

The occurrence of a totally new experience, which does not refer to any existing frame, could lead to random or inappropriate behaviour. The example of the Mann Gulch disaster, developed by K. E. Weick (1993)¹⁶³ illustrates this point. In a situation of crisis, a fire in a forest had run at unexpected speed and a group of 16 firemen were trapped in the flames. Two of them, guided by a more experienced leader, had escaped from the flames by throwing away their tools, by lighting a fire in front of them in order to create a hole in the vegetation and by

¹⁶³ WEICK, K.E., (1993), "The collapse of sensemaking in organizations: The Mann Gulch Disaster", Administrative Science Quarterly, Vol 38, 4, pp 628-650.

waiting for the burned area to protect them from the advancing fire. The other group of firemen, who didn't use this strategy, tried to escape by running, was trapped by the flames and finally died. Building his demonstration on a very careful examination of the reports, Weick concluded that the loss of sense was the reason for the accident: "I want to argue that the tragedy at Mann Gulch alerts us to an unsuspected source of vulnerability in organisations. Minimal organisations such as we find in the crew at Mann Gulch, are susceptible to sudden losses of meaning, which have been variously described as fundamental surprises, or events that are inconceivable, or incomprehensible. Each of these labels points to the low probability that the event could occur, which is why it is meaningless. But these explanations say less about the astonishment of the perceiver, and even less about the perceiver's inability to rebuild some sense of what is happening". By showing that the previous experience of one of the three survivors provided the reason for a correct analysis of the situation, Weick illustrated that existing cognitive frameworks help us to interpret situations.

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At the opposite end of the interpretation phenomena, routines are also described by Kim's model and refer to the procedural knowledge previously described. As we saw before, the last stage of action learning is the transformation of action requiring cognitive treatment into "automatic" behaviour. Anderson (1995)¹⁶⁴ described this change as the autonomous stage of skill acquisition. The authors adopted this name for the stage because: "the skills becomes more automatic, requiring less attention and interfering less with ongoing tasks". Each stage occurs before any direct feedback can be provided. A low attention level is devoted to the task. This means that we often implement actions without having to pay a great attention to the ongoing action. In Weick's article, the firemen who kept their tools when they should have left them in order to run, illustrated that in numerous cases individual behaviour does not refer to the situation but to existing routines. Only in the case of negative feed-back, will the routine be abandoned or transformed through the action learning process previously described.

To conclude on this model, learning may be characterised by the nature of the change occurring during the process. A change in behaviour which does not require a transformation of the frameworks or which doesn't involve a problem-solving process is consider as single

¹⁶⁴ ANDERSON, J.R., (1995), Op Cit, pp 338.

loop learning by Bateson (1972)¹⁶⁵. At the opposite end, transformation of schemes or development of a problem-solving process are defined as double-loop learning.

2.6. CONCLUSIONS ON THE INDIVIDUAL LEARNING MODEL: IMPLICATION FOR RESEARCH IN NEW SERVICE DEVELOPMENT.

As we saw in the first chapter, service innovations should be considered as being linked to the modifications of the delivery processes. As hypothesis for this work, we proposed that this change entails the creation of new knowledge achieved through a learning process, which should support and condition the innovative process. Does the individual learning model support such premise?

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2.6.1. Learning as an object of investigation

The first assumption is that there is a link between learning and the transformation of behaviour. Therefore, when front line people have to renew the way they deliver a service, the learning model may be considered as one possible explanation of the transformation of behaviour. However, the theoretical definition of learning revealed that a simple change in behaviour is not sufficient to conclude to the existence of learning. **Linked to this change, a transformation of the cognitive frameworks or schemes is necessary to conclude that there is actual learning.** As a consequence, the research project must include the recognition of such events.

Based on the conclusions of Kim's model, the research project will try to detect changes in the existing frameworks and schemes, which will be possible to analyse during the assessment and design stages. Thus, events such as cognitive dissonance (the existing gap between observed events and initial assessments), the new assessments challenging the existing ones and the change in existing knowledge due to the renewal of staff may be linked to innovative behaviour. **Each time the creation of knowledge results in the change of behaviour that supports the interaction processes, it will be possible to assert that the learning process**

¹⁶⁵ BATESON, G., (1972), Steps to an ecology of Mind, San Francisco, Chandler Publishing Co.

resulted in the creation of an innovative offer. The reverse correlation must also be investigated. Due to the assertion that the durable adoption of a new behaviour is conditioned by learning, it may be hypothesised that the creation of new offers relies on the possibility of learning made at the individual level. The confirmation of these two hypotheses will validate the pre-eminency of learning processes as a theoretical framework for innovation.

2.6.2. A historical perspective.

The identification of both learning and innovation strongly entails a temporal perspective. As asserted by cognitive theory, the ability to give sense to an event is strongly linked with the recognition of the situation's category. When faced with a new situation, a new stage in a process or a new product, one person will use his existing schemes to analyse it in order to find a sense. This suggests that the innovation process is strongly linked with what has previously been learned by consumers and staff members. So, the understanding of the innovative process, for example the reason of a particular choice, is impossible without being considered from the past of the individuals and of the organisations.

Therefore, the analysis of the change requires comparing a given situation with a new one in order to explain the dynamics of individual behaviour and learning. The identification of this complex process entails the adoption of a historical longitudinal perspective rather than a transversal and singular observation realised by one single questioning. Linked to our topic, the research project must adopt a historical perspective. Longitudinal research, retrospective case studies, qualitative encoding of events should provide the basis of the identification of learning, of the sources of learning and, finally, of the understanding of the relations between innovation and learning.

2.6.3. Limits of the Individual Learning Model.

This review led to the conclusion that the individual achieved learning by the acquisition of new skills and knowledge. The sole assertion that organisations are made up of individuals is not sufficient to reduce the mechanisms of organisational learning to those of the individual. As highlighted by many scholars, this sole concept is not sufficient to explain the way firms and companies behave. P Senge (1990)¹⁶⁶ underlined the way structures influence individual behaviour. He noticed for example that people placed in the same system tend to produce similar results, even though they are different. If the underlying structures shape people's behaviour, it is possible then to consider that individual learning does not explain in itself the way organisations learn. As stated by Argyris and Schön (1978)¹⁶⁷: “There is something paradoxical here. Organisations are not merely collections of individuals, yet there are no organisations without such collections. Similarly, organisational learning is not merely individual learning, yet organisations learn only through the experience and action of individuals. What, then, are we to make of organisational learning? What is an organisation that it may learn?”. This statement, amongst many others, raises the necessity to clarify the organisational learning concept compared to the individual learning one. This is the main purpose of the next chapter.

¹⁶⁶ SENGE, P., (1990), *The Fifth Discipline*, London, Century Business, pp 42.

¹⁶⁷ ARGYRIS, C., SCHON, D., *Organizational Learning: A theory of Action Perspective*, Addison Wesley.

3. ORGANISATIONAL LEARNING

So many practitioners, consultants and scholars have written on organisational learning topic that it is difficult to review extensively such a flourishing stream of literature. The basis of this growing interest is the focus on the competitive advantage provided by learning. In a context of rapid change, firms must consider they are in a good competitive position if they possess skills or resources that provide superior value to customers, are difficult to imitate and are capable of multiple applications as stated by Slater and Narver (1995). According to Levinthal and March (1993)¹⁶⁸, learning has three major influences. It contributes to the increasing of the firm's average performance. It also contributes to its reliability by increasing its skills. And it increases performance by raising the co-ordination of the staff members.

The concept of learning has referred for a long period to individual performance rather than an organisational process. This created the risk of anthropomorphising the organisation. This also means that the distinction between organisational and individual learning is not as simple to identify as asserted by many scholars. The main reason for this difficulty comes from the statement that organisations learn only through the experience and action of individuals as underlined by Argyris and Schön (1978)¹⁶⁹: "Organisational action cannot be reduced to the action of individuals that make up the organisation, yet there is no organisation action without individual action".

The interest of the organisational learning concept arises when the two following statements developed by G. Koenig (1994)¹⁷⁰ are considered. The first one suggests that a new individual competence may transform the firm's capacity to solve a problem. This suggests that individual knowledge has an impact on the entire system and may influence the way organisations perform. The competencies of the firm stem from its ability to identify, select, develop and nurture individual skills. Secondly, individuals are rarely in a situation to control all the competencies of the firm. This suggests that the competencies are largely disseminated

¹⁶⁸ LEVINTHAL, D.A., MARCH, J.G., (1993), "The myopia of Learning", *Strategic Management Journal*, Vol 14, pp 95-112.

¹⁶⁹ ARGYRIS, C., SCHON, D., *Op Cit*, pp 9.

¹⁷⁰ KOENIG, G., (1994), "L'apprentissage organisationnel: repérage des lieux", *Revue Française de Gestion*, pp 76-83.

within the firm. Therefore, the way co-ordination of individual competencies is achieved may largely influence organisational performance. Therefore, the way the individual competencies are built, stocked, disseminated and co-ordinated within the firm justify an organisational approach to learning.

We intend to focus our analysis on the definition of organisational knowledge and of organisational learning and will develop the main aspects of the concepts. Then we will analyse the organisational learning process and review some factors supposed to support it. Finally we intend to investigate the links which can be established using the innovation theory.

3.1. DEFINITION OF ORGANISATIONAL KNOWLEDGE AND LEARNING

Many definitions of organisational learning have been provided by research highlighting the different components of this concept. G Koenig (1994)¹⁷¹ defined Organisational Learning: “as a collective process of acquisition and creation of competencies, which will modify the way situations are managed and will transform the situations themselves”. This first statement highlights the creation of competencies as the final result of learning. This means that a learning organisation is able to increase its capabilities to solve problems arising in new situations.

Organisational learning literature is notably fragmented with multiple constructs. The different perspectives adopted are difficult to compare or even to gather given the divergence of the focus. In the research of Shrivastava (1983)¹⁷² it is suggested to classify the different perspectives into two main streams: Organisation Learning (OL) as developing knowledge of action-outcome relationships, OL as assumptions sharing. Those main streams will be introduced. Then their implication for the research will be developed.

¹⁷¹ KOENIG, G., (1994), Op Cit, pp 76

¹⁷² SHIRVASTAVA, P., (1983), “A Typologie of Organisational Learning Systems”, Journal of Management Studies, 20, 1, pp 7-28.

3.2. KNOWLEDGE AS ACTION-OUTCOME RELATIONSHIPS.

The concept of learning entails a change in existing knowledge. Therefore, we will define the concept of knowledge applied to the organisation. As we will review its complexity for individuals, it is necessary to introduce it before speaking of learning. According to J.C. Tarondeau (1998)¹⁷³: “organisational knowledge, in analogy with individual knowledge, is made up of the shared beliefs of causal relationships between phenomena, within an organisation”. This first assessment focuses on the action-outcomes cycle. Each time an action is implemented voluntarily, it is driven by an expectation of outcome. When the results match expectations one can speak of knowledge. The representations that generate and support the action are to be conceived as causal links established on the basis of previous experience.

Similarly, Argyris and Schön (1996)¹⁷⁴ described Organisational Knowledge with this example: “We have chosen to represent such knowledge through what we call “theories of action”.....We define a theory of action in terms of a particular situation, S, a particular consequence, intended in that situation, C, and an action strategy, A, for obtaining consequence C in situation S. The general form of a theory of action is ; If you intend to produce consequence C in situation S then do A.”. Similarly with individual knowledge, this definition entails that the actors of the firm have built a representation or an inference, which entails and supports appropriate behaviour.

In the same way, Nonaka (1994)¹⁷⁵ defines knowledge “as justified true belief” where beliefs are dynamic, relatively unstable and person dependent. Due to this capital of experience, the members of an organisation are able to solve problems, which arise all along a specific task. This means that in the course of doing ongoing tasks, organisations behave in a way designed to achieve an expected result. It is possible to speak of knowledge each time the result of action matches the expectations based on the initial model. The inferences are formulated on the external context, such as the behaviour of consumers or the competitors responses to planned actions. Moreover, they are also formulated on the internal context, such as be an

¹⁷³ TARONDEAU, J.C., (1988), Op Cit, pp 43.

¹⁷⁴ ARGYRIS, C., SCHON, D.A., (1996), *Organizational Learning II: Theory, Method and Practice*, Addison-Wesley Eds, pp 13.

¹⁷⁵ NONAKA, I., (1994), “The dynamic theory of Organizational Knowledge Creation”, *Organization Science*,

expected behaviour of a group, or the willingness of a colleague to co-operate.

The corpus of inferences is encoded within the organisation through a set of routines. They are made of predictable stable sequences of co-ordinated actions. “Standard Operating Procedures” or “rules of thumb”, described by Cyert and March (1963)¹⁷⁶ as the memory of the organisation, institutionalise the firm’s processes. As the result of previous experience, they materialise successful experiments, interpretations and beliefs. Therefore, organisational learning provides potential gains in productivity, resulting in the concept of the learning curve or of the “experience curve” developed by the BCG (1968)¹⁷⁷. This statement leads us to consider that performing repeated activities provides potential benefits for knowledge and expertise of the organisation.

The definition of Organisational Knowledge can be separated into two distinct components. First, the body of inference is made up of intellectual representations of reality, including chains of causality, models and tacit or explicit sequences of behaviour. However, these elements are not sufficient to define knowledge. As noticed by Senge (1997)¹⁷⁸, the definition of knowledge is “the capacity for effective action”. This means that the second part is made up of the actual behaviour that is set through sequences of actions resulting from inferences. The importance of the implementation of the actions must be underlined as said by Argyris (1999)¹⁷⁹: “From our perspective, learning may not be said to occur if someone discovers a new problem or invents a solution to a problem. Learning occurs when the invented solution is actually produced”. With a similar approach to individual learning, the author focuses on the result. Learning may be identified in the case of behavioural change only. The acquisition of intellectual competencies will be considered as Organisational Learning only in the case of an actual renewal of routines and procedures. This led Edmonson and Moingeon (1998)¹⁸⁰ to propose a definition integrating the different assumptions produced by previous research: “We defined organisational learning as a process in which an organisation’s members

Vol 5, Feb, pp 14-37.

¹⁷⁶CYERT, R.M., MARCH, J., (1963), “A behavioral theory of the firm”, Englewood Cliffs, New York, Prentice Hall.

¹⁷⁷Boston Consulting Group, (1968), “Perspectives on Experience”, Boston, Boston Consulting Group.

¹⁷⁸SENGE, P., M., (1997), “Sharing Knowledge”, Executive Excellence, Vol 14, 11, pp 17-19.

¹⁷⁹ARGYRIS, C., (1999), On organizational Learning, Oxford, Blackwell Ed, Second Edition.

¹⁸⁰EDMONSON, A., MOINGEON, B., (1998), “From Organizational Learning to the Learning Organisation”, Management Learning, Vol 29, 1, pp 5-20, pp12.

actively use data to guide behaviour in such a way as to promote the ongoing adaptation of the organisation. ". Many statements come out of these definitions.

3.2.1. Distinction between “ Theory-in-use ” and “ Espoused theory ”.

The statement of a separation between representations and actions leads to the distinction between “ theory in use ” and “ espoused theory ”. According to Argyris and Schon (1996), the first one is based on the body of inferences actually used by an individual during action. It includes the strategies of action, the values that govern the choices of strategies and the assumptions on which they are based. They may be either tacit or partially explicit. Their tacit aspect is due to the nature of procedural knowledge we described before for individuals but also to the goodwill of the individual to make them explicit. Thus, they should not be considered by the researcher as “ given ” but have to be constructed through the observation of the pattern of action in question.

The “ espoused theory ” means that it is possible for the individual to explain or justify activities by a theory of action not actually used. Many reasons may account for this point. First the individual may partially ignore a huge part of an entire process and so may have wrong representations of what is really happening. Second, the body of inferences may be tacit and therefore very difficult to make explicit through formal presentation. Third, organisation may adopt values and norms which are translated into standardised “ theory if action ”. Thus, the individual may have to justify or explain choices made previously according to those values and not to the actual actions. The “ espoused theories ” are a declarative set of actions that may strongly differ from the actual routines and pattern of actions.

This makes more complex the inquiries on organisational learning. In order to understand the actual body of inferences, the researcher must investigate the pattern of action. By observing behaviour, he will be in a position to explain the body of inferences which will be used by the actors. This requires an in depth investigation into the organisation’s processes and the actual behaviour of its members. It also means that the declarations of the individual have to be compared to actual behaviour in order to separate the “ theory in use ” from the “ Espoused

theory”.

3.2.2. Nature of Learning.

Given the nature of organisational knowledge, it is possible to distinguish levels of learning. According to the content and importance of the change in organisational inferences, Argyris and Schön (1996)¹⁸¹ distinguished three levels of learning.

Single loop learning means that the organisation's action strategies are modified in a way that unchanges the values and norms of the organisation. In this first approach, errors are defined as a mismatch between the outcome of actions and the expectations. Argyris and Schon (1996) gave the example of a marketing department. When the sales fell below the goals, their marketing set in place new action strategies, in order to react to the situation. It learnt by testing and implementing a new marketing plan, which would provide the results expected before. In such a case, the change of the organisational norms, such as the way targets are achieved by the staff or even the targets themselves, is not included in the learning. The adaptive behaviour is obtained in a context of a stable organisation. The analogy with the cybernetic theory may be used. In a system of heating or cooling governed by a thermostat, the adaptation of the temperature is realised without any questioning by the system itself. Single loop learning means collecting information and adapting the level of response within a given system.

However, double loop learning is characterised by the renewal of the theories in use and the development of new interpretation frames. Focused on exploration and creation of knowledge this kind of learning consists of the questioning of overall goals and purposes of the organisation. In the example of the thermostat, double loop learning will be necessary when the temperature exceeds the heating or cooling possibilities. Then the questioning of the finality of the system, the choices of components and targets which must be achieved, may lead to the design of another system and set other governing rules.

¹⁸¹ ARGYRIS, C., SCHON, D.A., (1996), *Organizational learning II: Theory, Method and Practice*, Addison Wesley Eds.

This kind of learning is achieved most of the time through confrontations of divergent opinions and interpretations frameworks as highlighted by Argyris and Schon (1996). When the achievement of norms set by the organisation leads to contradictory interpretations, then questions about the values themselves are due to occur. The result may lead to restructured performance goals and priorities. Thus, double loop learning is described as happening in controversial contexts which may threaten the organisation itself. Then, the balance between single loop learning (adaptation within a given frame achieved by repetitions of actions) and double loop learning (adaptation achieved by the change of the governing values and interpretation frames) may be essential to the survival of the organisation. As asserted by N. Alter (1995)¹⁸², single loop learning leads to the predictability of the results of actions. Thus, by decreasing uncertainties, procedures and routines will improve an organisation's effectiveness. Nevertheless, the standardisation achieved through learning may lead to the incapacity of inventing new productive combinations in reaction to unexpected events or opportunities. Thus, the focus on one learning strategy may lead to organisational traps, sterilisation or disappearance, which could be used by balanced learning strategies.

3.3. LEARNING AS AN INTERPRETATION PROCESS.

As underlined by Argyris and Schon (1996), learning occurs when the organisation's members experience a problematic situation made up of a mismatch between expectations and the results of actions. This leads the individual to produce a new set of inferences. The experience of a problem may be considered as the beginning of the learning process and may be used in order to detect it during research inquiry. This suggests that the occurrence of a new event that is not expected or an expected event that does not happen will question perceptual frameworks and will constitute the initial input of the learning process.

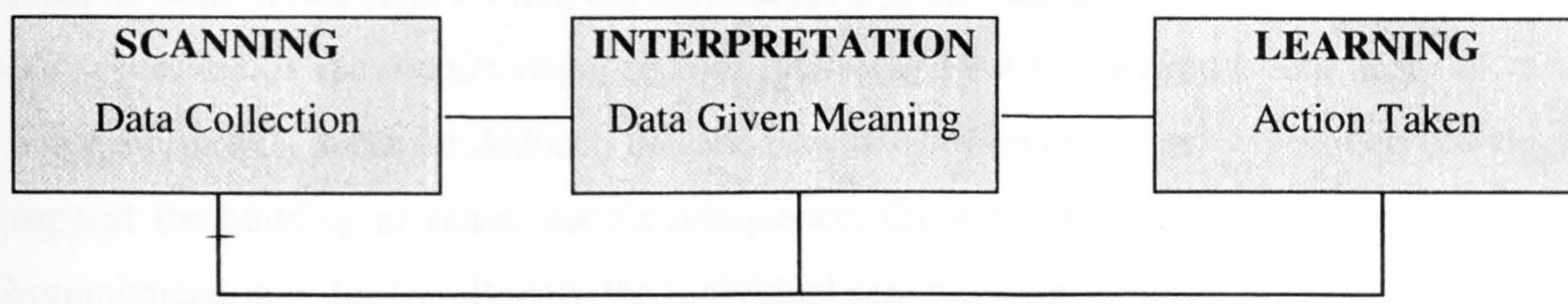
Not so far from this causal model of inferences renewal (if problem, then creation of new inferences), Daft and Weick (1984)¹⁸³ proposed another definition of the interpretation which links the data collection and learning in the model proposed in figure n°14. They put the

¹⁸²ALTER, N., (1995), "Peut on programmer l'innovation ?", Revue Française de Gestion, Mars Avril Mai, pp 78-86.

¹⁸³DAFT, R.L., WEICK, K.E., (1984), "Toward a model of organization as Interpretation systems", Academy of

emphasis on the interpretation process as being at the source of behavioural change: “Managers literally wade in ocean of events that surround the organisation and actively try to make sense of them.....Interpretation is the process of translating these events, of developing models for understanding, of bringing out meaning and of assembling conceptual schemes among key managers. ”.

Figure n°14: Relationships among Organisational Scanning, Interpretation and Learning



The interpretation stage, situated between the collecting of data and the learning stage, gives meaning to data that may come from the direct and indirect environment but also from the reactions to previous actions and from the organisation itself.

This process of a given sense of random events has been described as the interpretation stage in the early work of Daft and Weick (1984) and as a Sensemaking process by the latter research of Weick (1995)¹⁸⁴. This introduced ambiguity into the nature of this stage. The quotation by Weick (1995) of the research of Schön (1983)¹⁸⁵ provides a way of avoiding confusion: “In real world practice, problems do not present themselves to the practitioners as given. They must be constructed from the materials of problematic situations that are puzzling, troubling, and uncertain. In order to convert a problematic situation to a problem, a practitioner must do a certain kind of work. He must make sense of an uncertain situation that initially makes no sense”. Similarly, Nonaka (1994)¹⁸⁶ asserts that: “In reality, problems do not present themselves as given but instead have to be constructed from the knowledge

Management Review, 9, pp 284-295.

¹⁸⁴ WEICK, K.E., (1995), Sensemaking in Organizations, London, Sage.

¹⁸⁵ SCHON, D.A., (1983), The reflexive Practitioner, New York, Basic Book.

¹⁸⁶ NONAKA, I., (1994), Op Cit, p 28.

available at a certain point in time and context.”. This perspective emphasises events as being equivocal. Multiple meanings may be adopted to consider their nature and therefore to anticipate their consequences. This fundamental ambiguity of events leads to the necessity of building a common interpretation, adopted by the organisation. What is called an interpretation stage in this initial model may be also described as a Sensemaking process.

This assertion by Nonaka is reinforced by the previous analysis on individual learning. It was stated that, due to the properties of the schemes, two individuals will provide two different interpretations of the same situation. In the context of organisations, the shared interpretation must be built in two stages. First, the individuals will provide their own interpretation of what they observed. In the second stage, each of them will have to confront it with that one of the other. From this, it can be deduced that the processes of communication between individuals support the building of sense. As a consequence, the way the organisation supports prevent communication is due to influence the individual sensemaking.

Weick’s research (1995) provides seven characteristics of sensemaking. It appears to be grounded in identity construction, to be retrospective, to contribute to the enactment of sensitive environments, to be a social process, to be an ongoing process, to be focused on and by extracted cues, and to be driven by plausibility rather than accuracy. These key aspects of sensemaking are described by the author in a sequence as follows: “people concerned with identity in the context of others engage ongoing events from which they extract cues and make plausible sense retrospectively, all the while enacting more or less order into those ongoing events. This sequence is crude because it omits feedback loops, simultaneous processing and the fact that over time, some steps may drop out”. This statement suggests that the sensemaking stage lead the individual to build theories, inferences and hypotheses, which will be tested after, during the learning stage. In other words, the individuals engaged in the interpretation process transform the mental models by building new hypotheses about constantly occurring events. Therefore, three source of re-interpretation must be considered.

First, the interpretation stage is very sensitive to individual history. This means that a great variability of a large scope of experience resulting from the building of heterogeneous groups will result in a greater scope in interpretation. In other words, contexts requiring divergence in thinking will be supported by the diversity of the individual’s experience. But this suggests

also that variations in individual experience may result in the enrichment of the interpretations. In Weick's example of the Man Gulch Disaster previously developed, the experience of one of the team members, which differs from the other, provides the basis of another interpretation of the situation. Rather than using the tools as recommended in formal recommendations, the man decided, *based on his personal experience of a similar situation*, to adopt another behaviour. His interpretation of the situation, entailing different behaviour, avoided a total disaster by giving three members of the team the chance to survive.

Second, because of the social nature of the interpretation, the process is sensitive to the communication process established between members of the team. The authors underlined in their article that the collapse of sense resulting in the Man Gulch disaster is based on weak communication between the individuals of the group of firemen. When interpretation lies before all individuals, the building of collective sense must rely on the exchange of divergent individual interpretations. Therefore, by establishing communications, people will exchange divergent points of views and by doing so, may decrease the divergence of interpretations and representations. This process of confrontation of inferences and meanings has been described by Weick and Brown (1986)¹⁸⁷ as follows: "Communication necessarily entails an exchange of information tied inexorably to an inference of meaning. Because information rather than raw data is exchanged, some meaning has already been imposed on the materials. That the sender and the receiver are described as organizational participants suggests that meaning is grounded in common organizational experience". Because sensemaking is anchored in the individual history, the convergence of interpretation could rely on common experience within the same structure.

Third, this analysis suggests that learning loops are due to happen more frequently in two contexts. First, the complex environments, defined by Weick (1995) as being ambiguous and uncertain, may increase the occurrence of new events, which are not expected and may increase the non-occurrence of expected events. The growth of discrepancies will result into new sensemaking loops, which entails new learning loops. Second, the assumptions of the uncertainty of the environment, made by the organisation's members, will contribute to the creation of departments and mechanisms for searching and making tests about interpretation

¹⁸⁷ WEICK, K.E., BROWNING, L.D., (1986), "Argument and Narration in Organizational Communication",

in an active way. In such a perspective, Daft and Weick (1984) described the organisation as a Test Maker that is supposed to learn from these experiments.

It can be concluded from this analysis that the entire learning loop includes a stage of interpretation, resulting from the mismatch between inferences of expected events and the results of actions implemented in order to achieve the results. These results, very similar to the model of individual learning confirm the nature of learning, which entails both the transformation of representations and of actions patterns. What enriches the model is organisation. The sensemaking process is described as being social by Weick (1995) who quoted Burns and Stalker (1961): "In working organizations, decisions are made either in the presence of others or with the knowledge that they will have to implement solutions with the support of others. The set of considerations called into relevance on any decision making occasion has therefore to be shared with others or acceptable to them". This means that the building of inferences is achieved by the confrontation of diverging points of view rather than through solitary thinking. This strongly suggests that debate, conflicts, disputes, formal and informal communication are significant events in identifying sensemaking or interpretation processes.

The assumption of partial, fragmented individual knowledge supports the necessity of organisational knowledge, which overcomes the bounded rationality of the actors. By asserting that what is known by individuals is disseminated within the organisation, research tends to emphasise the interaction between people as being one of the key components of organisational knowledge. This means that, by transforming co-ordination between actors, it is possible to change what is known. This perspective constitutes the Assumption Sharing aspect of Organisational Knowledge.

3.4. ORGANISATIONAL LEARNING AS ASSUMPTION SHARING

This dissemination means that, for complex tasks involving many actors, knowledge is not equally widespread. Each actor develops a set of competencies related to one or many specific

functions. This competency is acquired through an individual learning process we described before. Previous individual experience and learning are used in order to interpret the ongoing situations, and to develop the behaviour that will lead to expected results. Therefore, each actor, specialised in a specific group of tasks in a given structure, will develop knowledge related to this singular situation. This knowledge has to do with what is known about a production process but also about the behaviour of other actors of the firms. It is acquired through the individual learning process we described before. It integrates the expectations of the way other people will behave within the firm as a result of the action. This results in the creation of a much-differentiated set of skills, which may be defined as situated knowledge as described by L. Araujo (1998)¹⁸⁸.

Therefore organisational knowledge relies on its ability to build individual competencies but also on the way they are co-ordinated to achieve specific tasks. As stated by Marengo (1995)¹⁸⁹: “the firm, defined from the perspective of the competence, necessarily requires an organisational and institutional approach: the way knowledge is disseminated, the existing rules and procedures for the transfer of knowledge appear to be fundamental.”.

The statement of the co-ordination of individual competencies leads to the social construction aspect of organisational learning as explained by C Tanguy (1996)¹⁹⁰: “The individuals formulate interpretative schemes based on their own experience, based on their own organisational context and on the interactions which leads them to confront “their” “interpretations” with the other’s knowledge”. Therefore, the creation of collective knowledge is based on a social process of interactions through communication. Progressively a given assertion made by a person is transformed by being faced with contradictory standpoints. This process transforms individual assumptions into a co-ordinated body of knowledge. Two pieces of research illustrate this point with the accurate concepts of “heedful interrelating” developed by Weick and Roberts (1993)¹⁹¹ and “knowledge transformation by socialisation”

¹⁸⁸AURAUJO, L., (1998), “ Knowing and learning as networking ”, *Management Learning*, Vol 29, 3, pp 317-336.

¹⁸⁹MARENGO, L., (1995), “ Apprentissage, compétences et coordination dans les organisations ”, Dans *Coordination et apprentissage des firmes*, Lazaric, N., Monier, J.M., Ed Economica.

¹⁹⁰TANGUY, C., (1996), *Apprentissage et innovation dans la firme: la question de la modification des routines organisationnelles*, Thèse de doctorat de l’université de Rennes 1.

¹⁹¹WEICK, K.E., ROBERTS, K.H., (1993), “ Colelctive Mind in Organizations: Heedfull interelating on ”, *Administrative Science Quaterly*, Vol 38, 3, pp 357-379.

developed by Nonaka and Takeuchi (1995)¹⁹². We intend to develop both of them in order to conclude on the involvement for knowledge creation during the innovative process.

The process of assumptions sharing as a factor of knowledge was explained by Weick and Roberts (1993)¹⁹³, during in-depth research on the flight operations on an aircraft carrier. Given the human and budget costs of an error, such a context requires nearly error-free operation. At the same time, the complexity of the operations is extreme due to the aircraft technology, the lack of space and time and to the potentially risky environment. The achievement of error-free operations in such a context requires strong individual knowledge. However, the successful completion of this task relies on the co-ordinations process between each actor during all the stage of the launching and landing of a plane. Each of those stages involves numerous actors, such as air traffic controllers, the control tower, navigators and deck hands amongst others. Therefore, actions are possible when “each participant has a representation that includes the actions of others and their relations. The respective actions converge relevantly, assist and supplement each other only when the joint situation is represented in each and when the representations are structurally similar....These representations and the actions that they initiate/bring group facts into existence and produce the phenomenal solidity of group process.”. These conditions create the possibility of achieving complex processes made up of many interrelated activities and embracing the actions of many individuals.

Therefore, the quality of the interrelations between the actors must be considered as having a strong impact on the result. Heedful interrelating will improve the comprehension of unexpected events by providing the possibility of connecting sufficient individual know-how to meet situational demands. This improved interpretation of the situation is achieved in three ways. First, the comprehension of events may be improved if more activities are connected. Enlargement of involved activities provides more diversity of knowledge which could be used to analyse and interpret events. Second, as a consequence of the first point, longer stretches of time may be connected. The increasing of diversity of experience means that lessons from the past could be used to enrich analysis and to avoid previous shortcomings and dead ends.

¹⁹²NONAKA, I., TAKEUCHI, H., (1995), *The knowledge creating company*, London, Oxford University Press.

¹⁹³WEICK, K.E., ROBERTS, K.H., (1993), “Collective mind in organizations: Heedful interrelating on,” *Administrative Science Quarterly*, Vol 38, 3, pp 357-379.

Third, the comprehension of events may be enlarging if the interrelation of the newcomers and the old-timers of the organisation connect different levels of experience. Cross-referencing their different points of views may enrich the possible interpretations of a given event. As stated by Weick and Roberts (1993): “ A system that is tied together more densely across time, activities and experience comprehends more of what is occurring because the scope of heedful action reaches into more places ”.

The Weick and Roberts (1993) analysis confirms many statements. First, they defined organisational knowledge as resulting from the interrelation between individuals. Collecting the experience that is disseminated within the organisation produces inferences about events. The capacity to cross-reference multiple points of view enriches the vision and interpretations of the ongoing situations. This puts communication skills at the core of the creation of knowledge. The successful achievement of complex actions relies on the way the organisation facilitates the confrontations, debates, exchanges and communications between individuals. The quality and frequency of inter-departmental communication as well as the quality and frequency of vertical communication through the hierarchy must be considered as raising organisational knowledge.

Second, the authors made a clear distinction between knowledge and the creation of knowledge. When repeated tasks previously learned and routinised are underway, heedful interrelating is not necessary. The occurrence of unexpected events in the case study entails building a diagnostic of the situation and therefore redesigning the tasks to perform. Only in this case, intense cognitive activity is required, based on explicit knowledge. Only in this case, a tight association of all the individual competencies is required. Only in problem-solving situations, will heedful interrelating produce efficient responses. By analogy, one can conclude that the similarity of this kind of learning with individual problem solving developed previously by Anderson (1995) exists. According to the authors model, during the first stage of learning, called the cognitive stage the individuals will try to find a solution by listing explicit, available knowledge related to the topic. The more knowledge is available, the greater the chance to find a fast and appropriate solution. Then, research of solutions based on heuristic reasoning will lead to the building of new inferences. During these two stages, heedful interrelation provides more available skills and competencies and will enrich the construction of inferences.

This establishes a clear distinction between organisational knowledge and organisational learning. In the first case, what has been previously learned results in routines. These sequences of actions are activated each time a defined problem is recognised. They do not necessitate an intense cognitive activity. In this sense, they may be considered as a tacit form of knowledge such as procedural knowledge for the individual. In the second case, the increment of the body of inferences, intense cognitive activity is required. From an organisational point of view, an established heedful inter-relational approach will contribute to successful results.

One can conclude that the creation of knowledge is strongly influenced by the social network that supports it. The number of actors included in the network, the diversity of their skills, the mutual knowledge of their skills, their willingness to co-operate and the quality of communication will provide the basis of organisational learning. This led Ravindranath and Grover (1998)¹⁹⁴ to consider the knowledge of the development teams as an “embedded knowledge”. Each member of the team brings its own skills to the group. However, those competencies will only be achieved during the interaction between members. Quoting Salomon (1993)¹⁹⁵ descriptions of the relations between individual relations and distributed cognition, they concluded that interactions through collaborative activities affect the nature of the distributed system. In return, the new system affects individual cognition, resulting in transformations of interpretations and providing the basis of new knowledge. “Therefore, we propose that the potential for new knowledge is *embedded* in the team *and its interactions*. The New Product Development (NPD) Team possesses *embedded* knowledge. The new product is *embodied* knowledge. Therefore, the NPD manager’s task is to manage the transition from embedded to embodied knowledge.”.

Nonaka and Takeuchi (1994, 1995)¹⁹⁶ by stressing the social dimension of knowledge in the firms developed a model of knowledge creation based on interactions. With an approach close

¹⁹⁴RAVINDRANATH, M., GROVER, R., (1998), “From embedded knowledge to embodied knowledge: New product development as Knowledge Management”, Journal of Marketing, Vol 62, pp 1-12.

¹⁹⁵SALOMON, G., (1993), “No distribution Without Individuals Cognition: A Dynamic Interactional View”, in Distributed Cognitions: Psychological and Educational Considerations, G Salomon, Ed Cambridge, U.K., pp 111-138.

¹⁹⁶NONAKA, I., TAKEUCHI, H., (1994), Op Cit.
NONAKA, I., TAKEUCHI, H., (1995), Op Cit.

to the cognitive distinction between declarative and procedural knowledge, they distinguished tacit from explicit knowledge. Their analysis of product development teams revealed that knowledge is created and transferred within the organisation through a process of social interactions between the actors. They classified this transfer into four main categories as follows in Figure n°15.

Figure n°15: The four Modes of Knowledge Conversion

<i>From \ To</i>		<i>Tacit Knowledge</i>	<i>Explicit Knowledge</i>
<i>Tacit Knowledge</i> — —		Socialization	Externalization
	<i>Explicit Knowledge</i>	Internalization	Combination

The fundamental assertion of the authors is the distinction made between explicit and tacit knowledge. After having claimed the importance of focusing the research on knowledge creation rather on what already existed, Nonaka and Takeuchi (1995) asserted that creation resulted from different situations, individual or collective and on the social interaction within organisations. By doing so they referred explicitly to the Anderson model (1995) previously developed. The analysis of the interaction process established four modes of knowledge conversion.

Socialisation corresponds to the transfer of tacit knowledge to tacit knowledge. The authors defined this mode as being a process of experience sharing. This learning mode is mainly based on observation, vicarious learning, imitation of practices rather than by the language. The basis of knowledge acquisition is the shared experiment and reproduction of tasks. In this case, by successive trial and error, the “ apprentice ” will progressively learn the way things have be done to achieve a result similar to the one produced by the “ master ”. Because the imitation process limits knowledge transfer to others individuals, this kind of knowledge

creation must be considered as efficient at the individual level. Nevertheless, this kind of learning is very efficient in a context where the complexity of a situation makes a formal information difficult. The example of complex problem solving, such as the creation of new products, illustrates the importance of the transfer of tacit knowledge. Nevertheless, though this process of knowledge transfer produces skills, it must be considered as closely linked to the specific context of learning and therefore difficult to transfer to other situations.

The case of the explicitation relies on the transformation of tacit skills into explicit knowledge by the use of metaphors, analogies, concepts, hypotheses and models. This process results in the transformation of know-how into verbal or written language. The authors give the example of the creation of a new very low-cost cylinder necessary to run a personal photocopier. The analysis of cans of beer during a break provided, by analogy, the basis of the technological choices adopted to design the cylinder. The explicitation of knowledge is considered as being one of the most important means of converting tacit into explicit knowledge. Quoting Donellon, Gray and Bougon research (1986)¹⁹⁷, the authors underlined the importance of metaphors and analogies: “By asking an auditor to see a thing in something else, the metaphors create a new interpretation of the experience and new ways to experiment reality”. To be understood, these new interpretations must be linked to existing knowledge. The analogies play this role by highlighting the structural and functional similarities with existing processes and models.

The combination is the process of transferring and mixing different fields of explicit knowledge. The selection, addition, combination and categorisation results in a new body of knowledge. Most teaching programs use this combination in order to create a new body of knowledge. In business contexts, the combination of product concepts with more general concepts as for example the vision of the firm may result in the renewal of the firm's vision. The authors provided numerous examples of these kinds of interactions between intermediate and global concepts. One of the interests of this kind of knowledge creation is that its explicit form makes communication to others easy to carry out. Thus, the importance of sharing common knowledge leads organisations to formalise knowledge into databases, S O P's, and written documents of all kinds. Tacit knowledge however, anchored in individual experience,

¹⁹⁷DONNELLON, A., GRAY, B., BOUGON, M.G., (1986), “ Communication meaning and organized action ”,

formal knowledge is easy to share and transmit to others.

Interiorisation is the conversion of explicit into tacit knowledge. It is closely linked with the “learning by doing” concept and relies on experimentation. After having integrated concepts and having combined them, the individuals will have to experiment. In contrast to explicitation, interiorisation means the transcription of languages into actions. This mode enables people to enlarge their repertory of experience with, as a result, an enrichment of the patterns of action. The experimentation stage also enriches the intellectual model with personal feelings, emotions and perceptions. It results in operational knowledge. Moreover, according to the Anderson model previously developed, the experiences matching the expectations will be progressively routinised. Therefore, cognitive capacity will be devoted to other tasks.

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Each of those stages may contribute to the creation of knowledge. But in all cases, they rely on the social interaction between people, who will co-operate, exchange information, confront and blend models and experiment with them. The opportunities of interaction are the opportunities to increment knowledge: formal and informal meetings, sharing databases and observation of practises contribute to the same result.

Nevertheless, the interpretation and assumption sharing mechanisms do not describe the way the created knowledge is memorised within the organisation and transformed into behaviour. Though they are linked, the creation of knowledge is to be distinguished from the way it is saved within the organisation. The concept of routines provides the means to understanding the “organisational memory”.

3.5. KNOWLEDGE AS EMBEDDED IN ROUTINES

The first assumptions about organisational knowledge highlights that it results from the previous experience realised in the past of the organisation. March and Levitt (1988)¹⁹⁸

Administrative Science Quarterly, Vol 31, pp 43-55, Quoted in Nonaka and Takeuchi (1995), Op cit.

¹⁹⁸MARCH, J., LEVITT, B., (1988), “Organisational Learning”, Annual Review of Sociology, Vol 14, pp 319-340.

defined organisational knowledge as made up of encoded inferences resulting from the firm's history: " organisations are seen as learning by encoding inferences from history into routines that guide behaviour. The generic term routine includes the forms, rules, procedures, conventions, roles, strategies and technologies around which organisations are constructed and through which they operate. It also includes the structures of beliefs, frameworks, and paradigm codes, cultures and knowledge that buttress, elaborate and contradict formal routines. Routines are independent of the individual actors who execute them and are capable of surviving considerable turnover in individuals ". This body of inferences constitutes the corpus of knowledge, which will be used, explicitly or implicitly by the organisation's members in order to achieve the desired outputs.

The body of inferences will result in the routines defined by Cohen and Al (1996)¹⁹⁹ during the Santa Fe meeting ²⁰⁰: " A routine is an executable capability for a repeated performance in some context that has been learned by an organisation in response to selective pressure ". This definition highlights the main components of what a routine is. First, routines are processes of transformation in order to achieve an expected result. This statement underlines the behavioural component of the routines that result from the action of the firm's members. Routines are patterns of actions that provide the repertory of behaviours that may be executed in a given context.

Second, the routines are considered as being self-activated without deliberative stage about the nature, content, expected result of the action. As said by Cohen and Bacdayan (1994)²⁰¹ "in short, we believe that, to a significant degree, organizational routines are stored as distributed procedural memories". Because it is the result of the procedural knowledge of the individual, the routine provides the possibility of fast reaction. The recognition of a given context induces the execution of the process. To achieve a given result, the individuals must interpret the context as similar to a previous experiment. If so the routine is activated and

¹⁹⁹COHEN, M., and Al., (1996), " Routines and Other Recurring action Patterns of Organizations: Contemporary Research Issue ", Industrial and Corporate Change, Vol 5, n°3, pp 653-698.

²⁰⁰The Santa Fe meeting has been initiated by the main contributors to the concept (Cohen, Dosi, Egidi, Marengo, Warglien, Winter), in order to convey an accurate definition of the routine. Two main distinctions were operated. Routines have been opposed to procedures. And they have been distinguished from the rules. See the Cohen and Al report.

²⁰¹COHEN, M, BACDAYAN, P., (1994), " Organisational routines are stored as procedural memory: Evidence from a laboratory study ", Organizational Science, Vol 5, Nov, pp 554-568.

provides a fast response, free from a costly and time consuming deliberation process.

Third, routines are the final product of the learning of multiple actors, interacting in the same task, and contributing to a final result, which is not entirely perceived and understood by the actors themselves. As previously stated by Koenig (1994)²⁰², no individual is in a position to master the entire body of inferences developed all over the organisation. As a result, the corpus of inferences is necessarily disseminated and fragmented. This means, as highlighted by Cohen and Bacdayan (1994), that routines are often unequally distributed over time and space between a huge number of actors. This means the interaction between actors is as important as each pieces of individual knowledge for the result. In this perspective, B Reynaud (1998)²⁰³ considers that organisational memory should be defined as the result of the interactions of individual routines. This means that the renewal of knowledge, and the learning of new patterns of actions may be conditioned either by a change in individual knowledge or by a change in the way the individuals interact.

From such a perspective, the definition of organisational learning integrated both the change in the existing set of inferences and the new set of routines, which results from them. This change may have many sources. The transformation of the external contexts may change the results of previous actions, inducing the renewal of existing inferences. Alliances with other organisations could suggest imitating (vicarious learning) or adapting the existing set of rules produced. Renewal of the composition of the staff may transform what the firm knows. In the same way, a change in the interaction process between the individuals may contribute to the change in organisational knowledge. The multiple sources of variations in the context entail a modification of the representation related to individual behaviour. Each time a new relationship between an action and its outcome transforms routines, organisational learning may be identified. This statement suggests that not all the changes in the firm's behaviour could be identified as learning and may be the result of random events.

According to these views, the body of inferences adopted by the organisation is very dependent on the way people interact. This suggests that the individual interaction model is

²⁰² KOENIG, G., (1994), Op Cit, pp 76

²⁰³ REYNAUD, B., (1998), " Les propriétés des routines: outils pragmatiques de décision et modes de

based on the support of groups and organisations. On the opposite hand, the results of interactions, a new set of inferences, will influence collective behaviour. This means that the sole individual interaction model can not describe the entire learning process. The links between individual and organisational levels are described in the organisational learning process.

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4. THE MODEL OF ORGANISATIONAL KNOWLEDGE CREATION

The process of knowledge creation is described at its beginning as individual learning and after as being a process of amplification and enlargement within the organisation. The major difficulty for the understanding of the way organisational learning is created is due to the multiple levels where learning is due to occur. As we noticed before, learning has to do with individuals and can't exist if individuals do not support it. But on the other hand, the action taken by firms are the result of collective actions as highlighted by Kim (1993): "Analogous to individual learning, organisational learning is defined as increasing an organisation's capacity to take effective actions". Therefore, a model of knowledge creation must establish the link between the individual and collective level, between the individual model of learning and its organisational result.

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Three models have been selected in order to provide an appropriate frame. First, the March and Olsen model (1975)²⁰⁴ established a clear distinction between individual and organisational learning with, as a result, the occurrence of incomplete learning loops. Second, Nonaka's model (1994), comprising three stages, relates the same process. Third, Crossan, Lane and White (1999) provided a framework to link the different levels of learning within a given organisation. Their analyses will provide the framework we will use to analyse service innovation.

4.1. THE MARCH AND OLSEN MODEL OF ORGANISATIONAL LEARNING

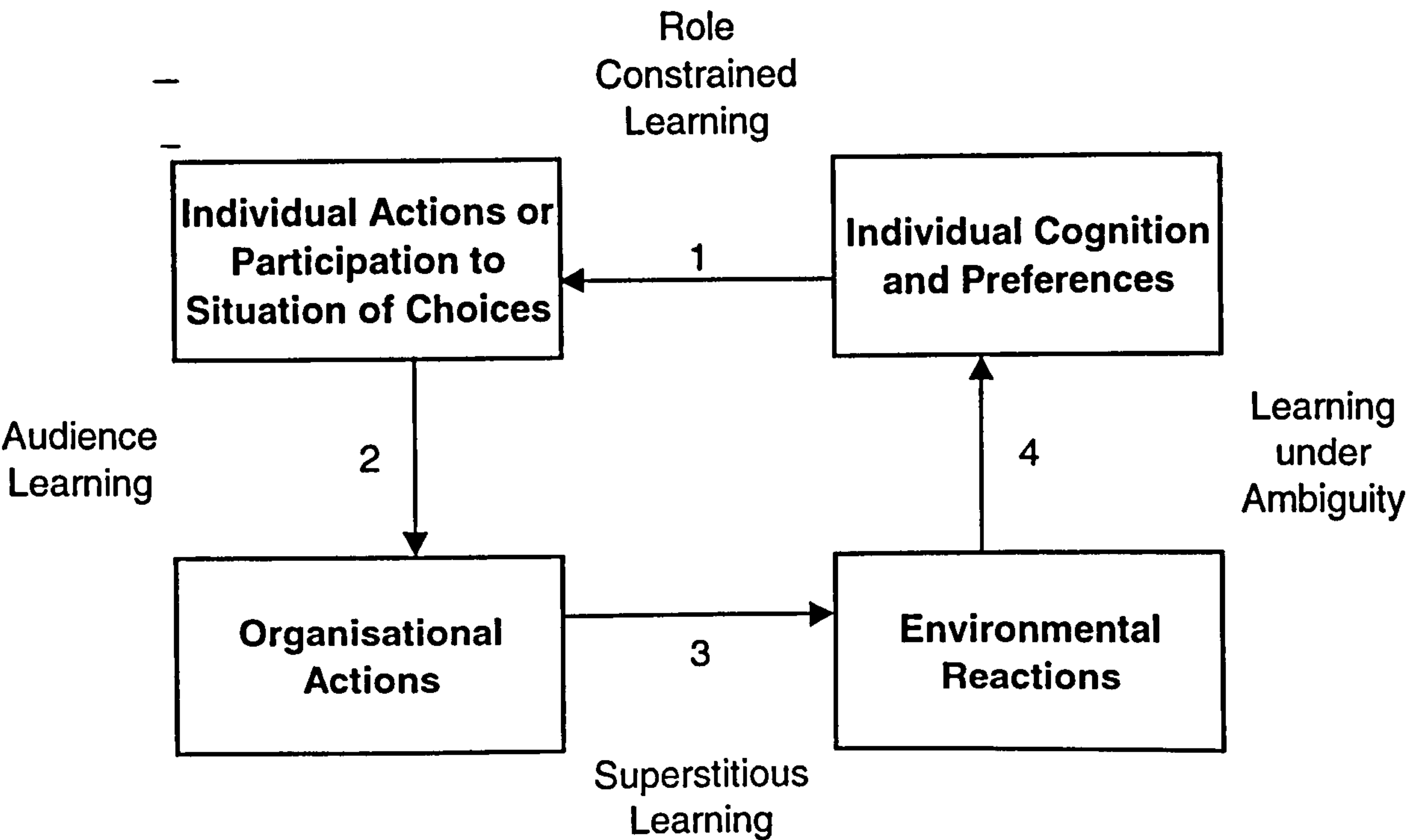
Very early, March and Olsen (1975) defined the basis of an organisational learning model. The underlying principles of this research, previously developed, were that the choices and decisions made by the organisations could not rely on a substantial rationality. When it is impossible to cover the entire scope of possible choices and of their consequences, actors have to decide on the basis of what has been called by March (1975)²⁰⁵ a "bounded rationality".

²⁰⁴ MARCH, J.G., OLSEN, J.P., (1975), "The uncertainty of the past: Organizational Learning under Ambiguity", *European Journal of Political Research*, 3, pp 147-171.

²⁰⁵ MARCH, J.P., (1975), "Bounded rationality, ambiguity and the engineering of choices", *Bell Journal of Economics*, 9, pp 587-608.

From this perspective, the learning process will be carried out in contexts where most of the time goals are ambiguous, where events are not clear and where causality links between phenomena are difficult to analyse. Therefore, the members of the firm must interpret the result of previous experience. The result of this process is a change in individual behaviour, which will result in the change of the organisation's behaviour. The result of collective action will be assessed. As a result, events will transform the individual perception of causal links. This is the learning cycle as described in the following figure n°16.

Figure n° 16: Cycle of Choices in Organisation



We can speak here of the process of learning. First, each stage is characterised by its impact on the following one. The individual cognition impacts on individual behaviour, which will impact on that of the organisation. Second, the achievement of this cycle is necessary to speak about learning. When the causality chain is broken by exogenous factors, the results of learning will be wrong. As an example, if the change in individual cognition due to experience does not impact on individual behaviour, then one can speak of role constrained learning. The

formal definition of the tasks that must be carried out by an employee may prevent the learning from occurring. Four ruptures are identified.

The first learning default, the role constrained gap, comes from the fact that the individual does not change his behaviour though the results of previous experience change his view of the world. This frequent situation refers to organisations which aims at standardising what they produce. As a result they tend to inhibit the results of experience by imposing behaviours and processes. Though the authors do not formally mention it, such a statement suggests that learning process may be altered or inhibited by efforts of standardisation. The same result may come from too rigid hierarchical systems, which do not have place for individual initiative.

The second learning gap will occur when individual behaviour can not influence collective action. The result of previous experience, even though it is well identified by some individuals, does not transform the way actions are carried out. This case occurs when, for example, the individual is not in a hierarchical position to influence other behaviour.

The third potential learning gap is due to the lack of links between organisational action and their impacts in environment. In this case, the learning cycle must happen entirely. Individuals, by implementing actions induce an organisational action. Its results are interpreted and provide the basis of future individual action. But during the process, the organisational behaviour has no real link with the change of environment, which may be due to other factors. Therefore it is impossible to conclude in the existence of organisational learning, although the entire cycle has been achieved.

The last potential learning gap is linked to the ambiguity of environmental reactions. This will happen each time the results of actions are not well perceived and the causal links must be deduced rather than directly observed. This case is highlighted by the authors as being the most frequent. The way people are exposed to information, their channel of distribution transforms the information itself. The time gap between the events and their explanations entails the use of different memories, individual, organisational, information systems, which will blur perceptions. People are in a situation where events are not immediately perceived, where it is impossible to know why they occur and where nothing is said about their interest and importance. Given this context of ambiguity, the creation of inferences, of individual

preferences may remain entirely subjective. The fundamental ambiguity of events results in the existence of multiple concurrent and divergent interpretations within the same organisation.

By given the main stages of the organisational learning process, this analysis emphasises possible discrepancies occurring at each stage. It also focus attention on two major issues. First, the analysis of events resulting from action is an interpretation process rather than an objective and complete reasoning, a substantial rationality. Therefore the understanding of learning requires analysing the way people are dealing with events and information. The way organisations collect, stock and exploit data must be considered as having a strong influence on the learning process itself. But comprehensive inquiries into learning entails also the process of making sense of experiences, of environmental change and of other behaviour. Thus, an integrated model of learning must include the results of the research on sensemaking we presented previously.

The third issue is that the organisational shape, norms and culture will strongly influence the kind and the nature of interaction between individuals. This is bound to affect the knowledge acquired by organisational members directly. As we saw that strong hierarchical shapes could generate a role-constrained gap in learning, we can assert that structures influence the perception and interpretation of events. For the same reason, they could urge people to produce new inferences by putting emphasis on the ambiguous nature of events as stated by Weick and Daft (1984). This suggests that a link must be established between the nature of the organisation and the potential learning which can occur. The research on the Learning Organisation illustrates this point.

The third implication of the March and Olsen model (1975) is that individuals interact all along the process in order to produce inferences, to implement actions at individual and collective levels. Though this statement is implicit in their analysis, nothing is said about the way this interaction is obtained. Nonaka's research (1994) provides the enrichment of the initial model.

4.2. NONAKA'S MODEL OF ORGANIZATIONAL LEARNING

Nonaka's model (1994) is made up of three stages which are the creation of individual experience, the sharing of tacit knowledge through social interaction, conceptualisation and crystallisation. The first stage of the process is made up of individual experimentation. Through direct actions and experience, individuals create the knowledge necessary to fulfil the tasks required. This knowledge creation is achieved according to the Anderson model (1995) described previously. The variability of events, contexts and problems will certainly increase the capital of knowledge if they contribute to the creation of new frames of thinking, new representations or inferences. The focus is given during this stage on the personal embodied experiment. With an approach similar to Schön (1983), Nonaka (1994) pointed out the importance of direct experience through experimentation in the creation of knowledge: "The individual knowledge is enlarged through its interaction between experience and rationality, and crystallised into a unique perspective unique to an individual. These original perspectives are based on individual belief and values systems, and will be a source of varied interpretations of shared experience with others in the next stage of conceptualisation" (p22). This approach is very similar to the one adopted by cognitive psychologists. This individual process will result in original perspectives, inventive interpretations and in the building of a novel body of inferences. Due to singular experience, this first part of knowledge creation results in divergent bodies of inferences, each individual building his own experience. The sharing of tacit knowledge through the sharing of experience constitutes the second part of the knowledge creation process.

To become organisational, individual knowledge must be shared between the member of the organisation. This is the second stage of knowledge creation. The achievement of such result necessarily relies on the existence of a social network providing the opportunities of interactions. This requires what Nonaka (1994) calls a "field" for interaction. The concept of the field, not so explicit in the quoted paper, refers to "self organising teams". Within such groups, people will cross individual perspectives. By doing so, they will solve conflicts resulting from divergent tacit experience and therefore will build higher-level concepts. Such groups must be built on self-organisation principles described as "a dynamic whole based on interdependence rather than on similarities". Because the group will be the support of the confrontations of divergent individual perspective, working appropriately necessitates a

climate of mutual trust and confidence. The transfer of other tacit knowledge is said to be achieved through a socialisation process (from tacit to tacit). Consequently, the composition of the group, the choice of its members and of their experience is a crucial decision for the creation of knowledge.

Firms may formally decide the creation of such teams. In this case, individual coming from multiple functions will interact in order to create new processes, products and technologies by solving unknown problems. But such groups exist outside the organisation. They are constituted on the basis of “communities of practices” as revealed by Brown and Duguid (1991)²⁰⁶. In the attempts to find a solution to a problem, individuals may generate links outside of the organisation using informal networks. Informal communities of scientists, engineers and marketers contribute to problem solving through informal exchange during meetings, conferences and social networks. The exchange and development of information will improve knowledge creation by increasing the scope and quality of individual experience. These results highlighted the importance of “boundary-spanning” individuals that will increase the quality and quantity of knowledge by looking outside the missing experience and giving it within the group.

When the group is created on the basis of mutual trust and confidence, the conceptualisation stage may occur. During this stage, individual knowledge will be articulated and thus, necessarily explicit. Therefore externalisation is the dominant mode of knowledge conversion. The description made before (see chapter: 2.4.3) of “co-active” learning by Doise and Mugny (1992, 1997) fits very well with the “self organised group” described by Nonaka (1994). Doise and Mugny (1997) proved, but for children’s development, that cognitive development is strongly dependent on social interactions. The comparison between different perspectives concerning the same dilemma will result first in their explicitation and second in the creation of a new set of inferences, not included in the initial assumptions. New assumptions because being explicit are possible to test. Combined concepts, obtained by deduction, induction or abduction are bound to be formulated. This process will be achieved through face-to-face communication between persons. Thus it must be considered that during these interactions, new representations are designed and tested, resulting in the increment of

²⁰⁶ BROWN, J.S., DUGUID, P., (1991), “Organizational Learning and Communities of Practice: toward a

existing knowledge.

The last stage of knowledge creation is crystallisation. The knowledge created has to be “embodied” in the products or in the infrastructures in order to become concrete. The various department of the organisation will test the applicability and reliability of the created knowledge in their own specific field. The dominant conversion mode is then the internalisation where explicit inferences are experienced in a specific context. Because it involves multiple actors and departments, this stage requires what is called by Nonaka (1994) the redundancy of information. Because this is ubiquitous within an organisation, redundant information provides the different experts with a way of co-ordinating their respective actions. Because of the redundancy of information, interactive inquiries may be obtained and will result in tightly coupled solutions, integrating the constraints of each actor.

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This body of assumptions is supported by literature on product development teams, which constitutes one of the possible fields of application. For example, Ancona and Caldwell (1992)²⁰⁷ amongst others found that teams with more thorough internal communication had superior performance. They defined goals better, developed workable plans and carried out better prioritisation of the tasks. The creation of interaction fields, supporting quantitative and qualitative communication, may therefore appear as crucial for knowledge enhancement.

The research of Raesfeld Meijer, A., De Ruyter, K., Cabo, P., (1996) illustrated the importance of interaction in the creation of knowledge as we said before. Their analysis of the interaction network, analysed through communication frequency, revealed that communication failures may lead to the creation of inadapted behaviours, resulting in the creation of inefficient offers.

Through the same kind of mechanisms, the presence of “Gatekeepers” within development teams facilitates the solution of complex problems as stated by Ancona and Caldwell (1992). Through the use of their own personal networks, the “gatekeeper” people will be able to look for the appropriate competencies within and outside the organisation if necessary. The

unified view of Working, Learning and Organisation”, *Organization Science*, 2, 1, 40-57.

²⁰⁷ ANCONA, D.G., CALDWELL, D.F., (1992), “Bridging the boundary: External process and performance in organizational teams”, *Administrative Science Quarterly*, 37, pp 634-665.

interaction between the “gatekeeper” and his contact will rely on the extent of personal networks and of the nature of the interactions established.

This last statement suggests that multi-level interactions, individual, groups and the organisation all support and influence the creation of knowledge at each stage. The model provided by Crossan, Lane and White (1999)²⁰⁸, developed in the perspective of strategic renewal, will support this approach. We have called it the multi-level learning model. It provides an appropriate framework for integrating the multiple streams of research previously reviewed and therefore will be used in the context of new service development.

4.3. MULTI-LEVEL LEARNING MODEL

The basic assumption of the authors is that the learning process contained four sub-processes. The building of collective knowledge is based on intuiting, interpreting, integrating and institutionalising. Those four sub-processes will occur differently at the three organisational levels which are individuals, groups and organisation as described in the figure n°17. We first intend to develop each of the sub-processes by relating them to previous work and then to present the resulting learning model. As most of those concepts have been previously developed, our intention here is more to provide the definition given in the article and then to relate the concepts to the other streams of literature.

The first sub-process described by the authors is the one of intuiting. What is described there is the pre-verbal perception of similarities and differences. Though many definitions of intuition may be provided by research, the authors underlined that most of them included patterns of recognition. As stated by Weick (1995) “intuiting is the preconscious recognition of the patterns and/or possibilities inherent in a personal stream of experience”. This stage of the process can not be considered as learning in itself. It is more a sensemaking process where the individual will try to make sense of an equivocal environment. Thus, intuition may be considered as based on the past and on the individual history.

²⁰⁸ CROSSAN, M.M., LANE, H.W., WHITE, R.E., (1999), “An Organizational Learning Framework: From Intuition to Institution”, *Academy of Management Review*, Vol 24, n°3, pp 522-537.

Figure n° 17: Learning/Renewal in Organisations: Four Processes through Three Levels

<i>Level</i>	<i>Process</i>	<i>Inputs/Outcomes</i>
Individual	Intuiting	Experiences Images Metaphors
	Interpreting	Language Cognitive Maps Conversation/Dialogues
Group	Integrating	Shared understandings Mutual Adjustment Interactive Systems
Organisation	Institutionalizing	Routines Diagnostic Systems Rules and Procedures

The examples of the expert and of entrepreneurial intuition illustrate this concept. As we developed previously in the individual learning chapter, the expert skills are based on its ability to identify patterns that the novice can not recognise. A chess master, because of a long and varied experience, is able to identify in a given situation a specific problem, which entails one or many actions. Intuition results from the previous experiences being routinised in tacit knowledge. The “entrepreneurs” are described as: “able to make new connections, to perceive new or emergent relationships, and discern possibilities that have not been identified previously”. Because of the fundamental equivocally of any event, the entrepreneur is in a situation to make a different sense of situations and therefore to produce a new set of inferences, based on non-verbal intuitions.

Because they are non-verbal and partly conscious, intuitions are difficult to share with others. The use of “metaphors” and “visions”, as described by Nonaka and Takeuchi (1985), will help to transform intuitions into verbal assumptions. Because they provide a way to transfer information from a familiar domain to an unknown field, the use of metaphors provides the

means to explicit intuitions. As asserted by Tsoukas (1991)²⁰⁹ quoted by the authors: “In lay discourse, metaphors constitutes an economical way of relaying primarily experiential information in a vivid manner, and they can be used as variety reduction mechanism in situations where experience cannot be segmented and imparted through literal language”.

The explicitation of pattern recognition by the use of metaphors constitutes the beginning of the interpreting stage. Through the use of language, individuals will explicit feelings, hunches and sensations. Thus, it will be possible to establish formal relations with existing concepts, categories and frameworks as we saw in Chapter 2.3.1. By transforming the experience into phrases, people will be able to relate events and data. Through the use of the language, which is described as playing a pivotal role, individuals are able to build inferences and link what is perceived to what has been previously memorised.

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The cognitive map resulting from this individual process is strongly rooted in the past. The interpretation, by relating events to pre-existing categories, results in a unique view of the world, mainly diverging from other cognitive maps. The same stimulus will lead to diverging interpretation because two individuals do not share the same history. This divergence in interpretation is called the equivocality of information. The same data may lead to conflicting interpretations, resulting in divergent set of actions. Thus, the co-ordination of action entails the reduction of this divergence and the building of shared understanding of events. In order to achieve such a result, the individual will have to develop common languages, to clarify images and to create shared meanings. As it is collective, this process will happen at the level of the group. The group interpreting process is the condition of co-ordinated actions. Through the communication occurring within the group, shared cognitive maps will be built and will support a co-ordinated group behaviour. This will provide the basis of the integrating stage.

When the interpreting stage is focused on the individual process of analysis of data, events and information, the integrating stage is oriented towards the coherence and co-ordination of collective actions. Through continuing conversations and common practices individuals learn to share understanding, develop mutual adjustments and negotiate actions.

²⁰⁹ TSOUKAS, H., (1991), “The missing link: a transformational view of metaphors in organisational sciences”,

As we observed before, the intuiting and interpreting process, because they are mainly related to individual history and competencies, contribute to a singular understanding of the world. Each individual builds his own categories and representation of reality. This process results in the divergence of the meanings attributed to a given event. The members of a development team bring heterogeneous and singular functional competencies and personal experience. Therefore, groups and more generally communities, such as the development teams, must be considered as the place where achievement of convergence is obtained. From the perspective of co-active learning previously described in chapter 2.4.3, individuals will solve their cognitive conflicts, resulting from diverging interpretations.

The conversation process within a development team will lead to expliciting individual interpretation schemes. Thus, it will lead to confronting the diverging point of views and will provide the basis of shared understanding. As described in the Nonaka and Takeuchi model (1995), the conversation will lead to combine the existing concepts, categories and inferences, resulting in the creation of a new set of knowledge. The result is that the group provides individuals with a way to enrich their own interpretations. Moreover, the exchange of individual representations will provide the understanding of the reasons why people behave in a certain way. By building the resulting predictability of the other's behaviour, it provides the basis of co-ordinated actions that will result in a new set of co-ordinated actions. The result of the integrative stage will be the creation of a routinised behaviour, a routine. The authors call this last stage the institutionalising stage.

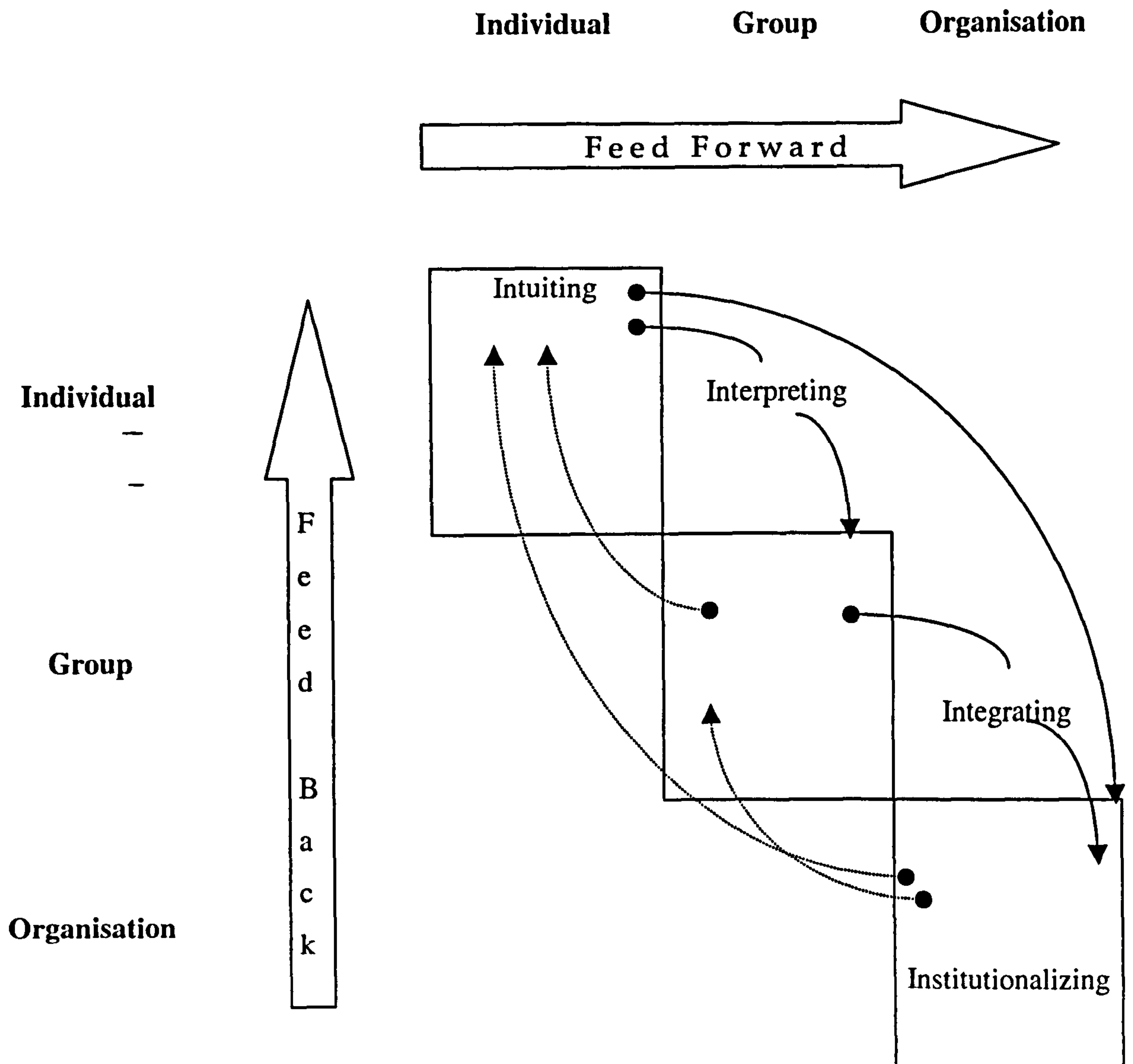
As we reviewed before, organisational learning is more than the sum of its members. This result is necessary for organisations to survive the turnover of individuals. It is achieved as we reviewed before, through the means of routines, procedures and other "rules of thumb". This transfer from the individual and group production of inferences to the routinisation of this knowledge constitutes the institutionalising stage. During this stage, individual and group knowledge becomes embedded in the organisation: "Over time, spontaneous individual and group learning become less prevalent, as prior learning becomes embedded in the organisation and begins to guide actions and learning of organizational members". This institutionalising

process is achieved through the implementation of a co-ordinated set of actions. The comparison between the expected results and the outcomes of the action will orient the selection of the appropriate behaviours. The routinisation of the results producing expected consequences will transform the collective exploration into an adapted body of rules, routines and procedures. The process of organisational learning is described by the authors as the 4I's model. It is summarised as follows in figure n°18.

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Figure n° 18: Organisational Learning As a Dynamic Process

(Source: CROSSAN, M.M., LANE, H.W., WHITE, R.E., (1999),
 “An Organizational Learning Framework: From Intuition to Institution”, Op. Cit.)



This analysis suggests first that the organisation must manage the tension between what has been previously institutionalised and the emergence of new knowledge as highlighted by March (1991)²¹⁰. The institutionalisation of knowledge means that actions are performed with

²¹⁰ MARCH, J.G., (1991), “Exploration and Exploitation in Organisation Learning”, Organization Science, 2, pp 71-87.

a greater efficiency. Existing rules shorten the intuiting, interpreting and integrating process, which are long to implement. The strong benefit of the use of what has been previously learned results in the tendency to focus on the exploitation of past experience. This means that action is led by the feedback of actions.

But when the environment changes, the results of previous learning may lead to invalid actions. Therefore, the results of the intuiting, interpreting and integrating process, that March (1991) called exploration, must feed forward and renew existing knowledge. This tension suggests that the renewal of existing rules results from the individual statements of discrepancies existing between what is expected from collective actions and their actual results. In situation of effective actions, the exploration process is due to decrease or to provide marginal changes. In the context of changing environments, the organisations which support the exploration model (here the intuiting, interpreting integrating and institutionalising process) will achieve better results.

Though it primarily emphasises the individual-group-organisation process, this model asserts also that there are direct influences between organisations and individuals in the creation of knowledge. The authors gave two examples of those links. First, institutionalisation will constraint individual intuition. As underlined by the authors: “Intuiting within established organisations with a high degree of institutionalised learning requires what Schumpeter refers to as “creative destruction”, destroying, or at putting aside, the institutional order to enact variations that allow intuitive insights and actions to surface and be pursued”. The intuition may be trapped in the organisational language and logic. The second direct influence means that in certain cases of learning, such as the shared experience of surgeon in a hospital, the action provides the possibility to develop shared understanding.

Moreover, this model also states that the learning rythm will be very contrasted at the different levels. Because intuition results from day to day experience, the individual learning process is supposed to be continuous and fluid. Each event is analysed and may results in a new interpretation. On the other hand, at the levels of the groups and organisation, the occurrence of change in routines and procedures is more incremental, discontinuous and less fluid. Once a rule is institutionalised, it will endure for a period. Thus, it will take time to transfer the singular experience to the organisation level.

Through their theoretical framework focused on the process of organisational learning, Nonaka and Takeuchi (1995) and Crossman and Al (1999) provided the way to link the different levels of learning. Moreover, they also defined the organisational learning process as being the essence of the innovation process. We intend to support this assertion in the next chapter.

4.4. CONCLUSIONS: INTERESTS OF THE ORGANISATIONAL LEARNING MODELS FOR NEW SERVICE DEVELOPMENT

In this chapter, we will discuss the interests and limits of the O.L. models, then investigate the interest of the model for service innovation and will then underline the impact of the model on research methodology.

4.4.1. Interests and Limits of the (4I) Multi-Level Learning Model

The Crossman and Al model (1999) presents many interests. It is coherent with the models resulting from previous research, such as the one of March and Olsen (1975), of Argyris and Schon (1978), of Daft and Weick (1985) and Nonaka and Takeuchi (1995). Compared with these previous works, it provides a good framework, which explains the link between individuals, groups and organisation levels. It reports the way individual skills and competencies are articulated, co-ordinated and integrated within an overall task. As we stated before, organisational learning is more than the sum of individual learning. This means that a valid framework must integrate both individual learning research, focus on its cognitive aspects, and the interactionist perspective, resulting from the organisation approach. By doing so, the 4 I's model (multi-level learning) provides an explicit framework integrating the influence of the different levels of the organisation.

Moreover, it describes organisational learning as a process. The main stages are identified. The nature of the interactions between the different levels of the organisation are well

described. The respective influence of the individuals on the creation of routines is clearly described. The feedback effects of the routines previously created on the individual intuiting and interpreting are also highlighted. This revealed the importance of institutionalisation for the entire process as demonstrated by Argyris (1999) in many case studies. Compared with the model of Nonaka and Takeuchi (1995) this represents an important contribution.

Nevertheless, the Crossman and Al (1999) model present some weaknesses. First, like most of the theoretical papers, it remains to be validated by further empirical research. The description of the organisational learning process is coherent with the previous models. But very few of them have been actually tested. For example, the research of Daft and Weick (1985), has not been formally tested. Nonaka and Takeuchi's (1995) model represents from this point of view an important contribution. Their work, built on empirical and qualitative data resulting from shared experience with development teams, may be considered as a relevant way of validating a complex model, describing time causality links between events.

Second, this model was built from the perspective of the strategic renewal of firms rather than on the product or service renewal. The authors distinguished the two processes. Strategic renewal encompasses the entire firm. This is not necessarily the case for product or service development, which may be analysed within the context of individual and groups. Moreover, product development is more focused on the exploration side of the organisation when the strategic renewal is described as being more concerned by the Exploitation-Exploration dilemma as defined by March (1991). This suggests that the model remains to be validated and adapted from the perspective of new service development.

Third, the intrinsic complexity of the model leads us to conclude on the unpredictability of the outcomes of the process. What is predictable is that learning occurs through a process of intimate intuition, explicated within groups and the organisation. Therefore, the reasons for eventual failures in learning must be investigated from the way individuals, groups and organisations operate and interact. The examples of multiple case studies focused on organisational routines led by Argyris (1985-1999) illustrated how the institutionalisation of the routines may prevent managers and to their organisations from learning effectively. Defensive routines may influence individual intuition and interpretation in such a way that the actual test of inferences is impossible or by-passed.

Given the interest of the model and its potential weaknesses, the opportunity for its use for service innovation has to be reviewed. This is the purpose of the next chapter.

4.4.2. Interest of Organisation Learning Models for New Service Development.

Much research has highlighted the interest of organisational learning for the understanding of the innovation process. Based on nine case studies, A. Pearson (1991)²¹¹ described innovation as being a process of uncertainty reduction. This uncertainty may be defined through two dimensions, which are uncertainty about the final output or ends and uncertainty about the means. The higher the uncertainty of the ends, the higher the uncertainty about means, entailing the greatest risk of failure. This perspective highlights that learning must be at the core of the innovative process by contributing to the reduction of random events.

Much research has underlined the links existing between innovation and learning. Maidique and Zirger (1985) revealed through the analysis of 158 new products that success and failures were strongly interrelated. Failures were considered as leading to the creation of new knowledge while successes resulted on the other hand at the opposite in the unlearning of the processes which led to success. Because this assertion put learning as one of the crucial success factor, the authors distinguished three source of knowledge acquisition. "Learning by using" refers to the use of new products by the final clients. Maidique and Zirger (1985) also highlighted "learning by doing" which occurs internally. It results in the experiential curve during the production process. But they also underlined the positive effects that may arise from failure. Disconfirming results may result in major re-orientations, in the redefinition of the development process, and finally in improved performance. This analysis suggests that the learning process must be considered as a success factor.

Similarly, Simon (1991)²¹² considered innovation as a classical organisational learning

²¹¹ PEARSON, A.W., (1991), "Managing Innovation: an Uncertainty Reduction Process", In D Walker and J Henry, Managing Innovation, Sage Ed, pp 18-27.

²¹² SIMON, H.A., (1991), "Bounded rationality and Organisational Learning", Organization Science, Vol 2, n°1,

process: "A successful product must satisfy a whole range of constraints, the knowledge of which may originate in many parts of the organizations.....Aquiring knowledge of the appropriate constraints is an important learning process, since that knowledge is generally widely distributed throughout the organization and elsewhere, and is seldom all available to the research and the development teams at the beginning of the process". Because the creation of a new set of attributes fitted consumer expectations and productive skills rely on the change of well-known "recipes", development teams have to create knowledge about production means and marketing inputs.

Moreover, the uncertainty reduction process is described as being supported by groups, networks and organisations by a lot of research focused on innovation. The analysis of the innovative process proposed by Akrich, Callon and Latour (1988)²¹³ defined development as being made up of a multiplicity of heterogeneous and complex decisions. Taken by a great number of different and often opposite groups, it is impossible during the process to identify the one that will be the most important and relevant for the final result. Substantial rationality is therefore impossible, as incertitude is the essence of an innovative process. The "One best way", often developed to tell the story of successful innovation, is seen as the need to justify, after the development process, the decisions taken before. The opposite of a linear program, the entrepreneur is assailed with contradictory information and advice. He must take decisions without the help of clearly identified procedures. **In such a context, success cannot be defined as the adoption of the most efficient solutions adopted *in general* but from the point of view of the actors of the process themselves.**

From this interactionist perspective, the adoption process must be seen through the involvement and interests of the adopters. As stated by the authors, "The involvement model describes the way innovation is adopted and how it spreads progressively to achieve success. Socio-technical analysis underlines that the adoption process is an adaptation process. Any production innovation exists in general. It must be transformed according to the plant's specificity where it is introduced. *To adopt an innovation means to adapt it*". Then the authors focused their analysis on the process and on the way people interact to adopt and adapt

Feb, pp175-187. Pp 183

²¹³M. AKRICH, M. CALLON, B LATOUR, (1998), "A quoi tiennent les innovations", Gérer et comprendre, Annales des Mines, Juin, pp 4-29. This work is built on longitudinal in-depth case studies of success and failures

innovation.

The way Renault, the French automotive firm, created the innovative Twingo gives a good example of the interactive process. Described by Midler (1992)²¹⁴, the development process is based on the existence of a "project deck". Set up in the same place, with no doors, the "project deck" regroups individuals, bringing the professional skills required to develop each component of the car. Because this kind of organisation enables fast communication through continuous interaction, concurrent engineering is possible, making the process more efficient. By giving the possibility to confront divergent opinions, it provides a better integration of all the constraints and so increases development speed.

From the interactionist perspective, innovation is seen as the continuous building of a shared interest. Internal and external adopters, staff members, providers and clients, develop a shared meaning through the network created by the entrepreneur or the firm, a socio-cognitive configuration. From such a view, innovation relies on delicate, local agreements. Individual and organisational communication skills are asserted as the key component for success. Such statements open the way to analysis based on the description of organisational learning able to induce failure or success.

The importance of learning in innovation emerges also from the analysis of a new service development. Jallat (1994)²¹⁵ gave a good example of the relevance of the interactive model. His work gave a good description of the means required by the French Group Accor to produce a new discount hotel concept: "Formule 1". As a new segment seemed to appear on the French market, the development team began to build a standard interaction process and the servuction system was able to produce it with good profitability forecasts. Only an initial prototype building was necessary to set up the building standards. In return, the initial service process was strongly influenced by building constraints. To do so, the development's work required the interaction with external building specialists and integration of their knowledge and constraints.

in a large scope of innovation like the Post-It, a new computer, the launching of new artificial leather.

²¹⁴MIDLER, C., (1993), *L'auto qui n'existait pas: Management des projets et transformation de l'entreprise*, Interéditions, Paris.

²¹⁵JALLAT, F., BOURGOIS, J.F., (1994), " Histoire d'une innovation réussie: le lancement de Formule 1 ", *Décisions Marketing*, n°2, Mai-Aout, pp 31-35.

None of these works formally asserted the existence of links between the learning process and innovation process until Nonaka (1994) demonstrated it, but for products. Their work, as previously reviewed, anchored the development process in creation as new knowledge. It is because teams produces knew inferences that they are able to create new products. It is because their work transforms individual representations that new attributes, functions, and outcomes are produced. It is through the testing of inferences, through the mutual adjustment of representations that the development team is able to produce a result which conforms to its expectations. It is through a learning process that the final result is due to be achieved.

Due to the focus of the previous works on the development of products, nothing has been clearly explored for services. **This justifies the adoption of the following guiding hypothesis: the creation of a new service, based on the renewal of the intangible components of service offers, should be considered as a process of creation of new knowledge achieved collectively. Investigating this hypothesis entails analysing the validity of the organisational models previously developed. If the creation of new services is obtained through an organisational learning process, then one must observe the main phenomenon predicted by the model. This research will aim at validating this central assumption.**

PART THREE:

REVISITING THE OVERALL RESEARCH QUESTIONS & RESEARCH OVERALL METHODOLOGY

This literature review provided a better definition of what we called service innovation. It also provided many insights into the links between innovation and learning. However, the analysis of existing research revealed many gaps that required further investigation. As reviewed in part one, the new service should result in a new set of routines and procedures. They support the renewal in the interaction process with the client. The members of the organisation within the distribution network are supposed to achieve this new interaction process through the adoption of routines and procedures. To say that this process is achieved through the creation of new knowledge implies that the events observed during the development must fit with the Crossman and Al (1999) and the Nonaka and Takeuchi (1995) models. Thus we intend to summarise the research question in order to justify, in a second part, the methodology adopted for this research.

By reviewing literature on the servuction process, we hypothesised that innovation means a change in the interaction process between organisations and customers. Similarly, we deduced from previous research that innovation is achieved through change in existing procedures, rules and other “rules of thumb”. The review of the previous works revealed that the validation of this kind of hypothesis was impossible to achieve on the sole basis of the existing statements.

This led us to focus our initial investigation on the nature of service innovation in order to provide a clearer understanding of what is actually transformed in innovation. Is it only a change in the interaction processes, in the number and nature of the main stages, or should it be considered that innovation encompasses other elements? In other words, is it possible to provide a more extensive definition of what encompasses service innovation and by doing so, provide a better definition. Surprisingly, it must be stated that previous research did not provide insights into the content of innovation. The nature of the change, its importance or what constituted newness is not clearly detailed in any of the 53 pieces of research. This generated a very inaccurate definition of innovation with, as a consequence, the difficulty of identifying the success and failure criteria. How is it possible to identify and compare their influence if it is impossible to assert that innovation is of the same nature and extent? The nature of innovation must be one of the purpose given to the research methods. In order to avoid the pitfall of previous research, the aim of the methodology must integrate an in depth observation of the change so that a comparison may be achieved between different delivery

process, sectors and firms.

The second purpose of the methodology will be to provide an accurate view on the diversity of the sectors, firms and offers. Very often, the samples of quantitative research mixed different companies of different size, extracted from different sectors and delivering non comparable offers. This choice relies on the basic assertion that, because they do not deliver tangibles, all the service offers may be compared. This would suggest that a good project manager for the development of new offers in the bank could be efficient for the creation of new offers for retailing, consultancy or training. This would also mean that any service company may create offers in another sector if it so wishes. Such assertions can not be built on the sole assertion that the firms belong to a same category called “service”. It necessitates further enquiry to be extensively explored and validated.

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The initial research produced any formal and extensive definition of service innovation, have not implemented cross-sectorial comparisons and provided no theoretical model for service innovation. This underlined the crucial interest of this research project. The purpose of this part is to build a methodology that provide reliable answer to those questions. Therefore, many parts will be developed. First, the research question will be detailed. Then, the methodological choices will be detailed and extensively discussed.

1. NEW SERVICE DEVELOPMENT AS CREATION OF ORGANISATIONAL KNOWLEDGE.

The research question entails dividing the survey in two broad parts. First, the process by which the organisation creates the new service must be detailed. During this part, investigations will be focused on the transformation process. Once the accurate definition of the nature of the change has been provided, it will be possible to observe the way those changes are obtained and the means that are used by managers in order to transform the delivery processes. What are the main stages of the changes linked to innovation? What are the main actions carried out by development teams in order to make their project work? What are the main decisions taken? Given that the new services must be created, on which kind of reasoning is it possible to base those decisions? Such an analysis should lead to the building of a productive set of variables, anchored in the actual practices of the managers.

The second part of our work leads to the hypothesis that the development of a new service is achieved through an organisational learning process. This means that new service development should present the characteristics of the learning process. Then our methodology should lead us to observe the following set of stages, which correspond to the organisational learning framework of Crossan and Al (1999), previously described. Their identification during the innovative process will lead to the confirmation of the relevance of our initial hypothesis.

1.1. DEFINITION OF THE INVESTIGATIONS

In the hypothesis of the NSD being an Organisational Learning process, the following set of events must be observed.

Event A: The initiation of NSD may come from many sources, which result in cognitive conflicts within the organisation. Resulting from the disconfirmation of expected outcomes, or from the occurrence of unexpected events, the cognitive conflicts will lead to the invalidation

of adopted routines and procedures. Thus they will give birth to new representations aiming at providing new solutions that could solve the encountered problems. These new solutions are the basis of the new service that will be developed later. The cognitive conflicts must be linked to the selected development project.

Event B: Exposed to these cognitive conflicts, individuals will develop new intuitions resulting from their own tacit experience. Intuitions are personal beliefs about causality links existing between events. Because they are anchored in personal history, experimentation and previous experience, the individual interpretations of the disconfirming events will be divergent within the organisation.

Event C: The existing routines are stored in procedural knowledge. In order to create new knowledge, procedural knowledge must be transformed into declarative knowledge. Then new solutions may be created. The occurrence of an unexpected event entails the explicitation of knowledge by the staff in order to create new solutions. On the basis of explicit knowledge, it is possible to provide new combinations of inferences to test. This process of explicitation is based on the interaction between members of staff.

Event D: The convergence of representation is achieved through the confrontation of diverging opinions. Communication supports the confrontation of opinions. Conversations, written documents and reports will constitute the basis of the decisions taken all along the process. Thus the formal and informal interactions between organisational members contribute to the convergence of representations. “Heedful interrelating” communication process is necessary to achieve convergence when loose interactions leads to divergence. Therefore, lack of communication could contribute to failure.

Event E: A formal process is institutionalised as a result of the convergence in the representations. Explicit knowledge is transformed by each individual actor into a routine (by transforming the explicit into procedural knowledge). This suggests that innovation is formalised through written documents, computerised programs, and formal procedures. It may also be formalised through the use of the infrastructure, buildings and other equipment which will embody the new knowledge.

Event F: The creation of a formal and informal social network supports the convergence of the representations. The exclusion of holders of specific competencies outside the development network will result in failure of the servuction process. The integration of adapted skills into the social network contributes to the creation of valid knowledge. The exclusion of organisational members having specific skills leads to discrepancies in the development process.

Event G: Because they are mainly procedural, the transfer of newly created routines to other part of the organisation induces a new organisational learning process. When a given process (resulting in new routines), adopted in one part of the organisation, is bound to be extended to its other points (within the distribution network), then a new organisational process will be implemented. Because it is anchored in individual histories, the result will differ from one point to another.

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In addition to the previous set of events, multiple retroaction links may unfold all along the process according to the Crossan and Al model (1999) and to the previous Kline and Rosenberg (1986) model, focused on new product development. This means that, rather than considering learning as a linear model, we must adopt methodologies that permit the observation of the retro-actions. However, all the learning models emphasised the output of learning, which is defined as a durable behaviour. Thus, the occurrence of learning may be deduced only when stage F unfolds after the previous one and as a consequence of the previous cognitive activities. This reinforces the focus on the methodology that must support such kinds of observations.

This organisational learning process is deduced as a first conjecture from our review of the literature on organisational learning. Very few works on organisational learning focused on the actual behaviours and actions that may be related to learning. Though Nonaka's work (1995) has been based on empirical statements, the model of Crossan and Al (1999) remains to be validated by observation. This underlined the importance of carrying out empirical research aimed at the understanding of the sequence of organisational learning.

1.2. CONTEXT, CONTENT AND PROCESSES.

Identifying the set of events previously described lead to define the scope of potential observations. We intend to describe in this chapter the scope of information that must be collected all along the investigations. They are linked to the context of the firm, to the content of the innovations and to the process of change.

First of all, it is hypothesised that the learning process find their source in the initial cognitive conflicts. While performing a task, the individual will interpret the unexpected outcomes of the actions. This means that, at last, the observer must be able to understand the sense given to an event by the individual. It involves for example to understand the kind of input that trigger the conflict and why it is source of cognitive conflicts. This leads the observer to integrate the context of the individual action into the descriptions.

Moreover, the contexts of the firms will help us to compare the results of the two case studies. In her early research, J Woodward (1965)²¹⁶ highlighted that technology of production has a major influence on the formal structures of firms. In the same perspective, Mintzberg (1981)²¹⁷ provided further evidence of the impact of contingent factors on the structure of the organisation. Therefore, the inclusion of contingency factors in the scope of our observations will provide two major opportunities. First, the choice of similar processes of “servuction” will reinforce the potential of comparisons between the firms. Second, the variation of the contexts resulting from two different environments means that it becomes possible to compare the data and to discuss the potential extension of the results. This justify the detailed presentations of the two firms including their contexts, environments and formal organisation that will be done in the chapter 3.3.2, 3.3.3, 3.3.4 of this part, and also in the chapter 1.1 and 1.2 of the part Four.

The second set of observations is focused on the nature of the change that occurs during the service innovation. Speaking from innovation entails identifying what is produced before and

²¹⁶ WOODWARD, J., (1965), *Industrial Organisation: Theory and Practise*, Oxford University Press.

²¹⁷ MINTZBERG, H., (1981), *The structuring of the organisations: a synthesis of the research*, Prentice Hall.

after the change. Due to the analysis of the “servuction” made by Langeard and Eiglier (1987)²¹⁸, this comparison must include the processes by which the services are delivered. It must also include the infrastructures, personnel and back office systems that support the processes. This part of the report will aim at providing the most accurate view of the change induced by innovation. It is mostly given in the chapter 1.1. et 1.2 of the part four.

The accurate definition of what has changed during innovation does not say anything on the process of change. This is one major objection given the purpose of the identification of learning. It is impossible to conclude on learning with no evidence of the longitudinal links between cognition and action. Therefore, the purpose of the data gathering is also to provide a temporal and historic view of the events. This part of the research will analyse the process of change, the main stages. It will analyse the reasons that trigger the change until the hypothesis of learning may be confirmed or infirmed. The analyse of processes is developed in the chapter 2 of the part four of this work.

Such a scope that melt context, content and process of innovation may appear as being too ambitious. If not concentrated on the innovation, the collection of data linked to those fields could overcome the capacity of any researcher to give them a sense. On the other hand, because identification of learning rely on the observation of links between cognition and action, the separation of the context, content and process would lead to weak results. As consequence, the methodology adopted proposed multiple ways of validating the data. Given the place and importance of processes in this approach, a more detailed analysis on the nature of processes and of their impact on methodology is provided.

²¹⁸ EIGLIER, P., LANGEARD, E., (1987), *Servuction*, Ediscience International Eds, 6ème Ed

2. INVESTIGATING ON PROCESSES.

The understanding of innovation entails focusing on the way innovations emerge, develop and spread within the organisation. Both service innovation and organisational learning requires the understanding of the ongoing processes. As Van de Ven and Poole (1990)²¹⁹ wrote : “From a developmental perspective, such a process theory focuses on explaining the temporal order and sequence of steps that unfold as an innovative idea is transformed and implemented into concrete reality”. Innovation like learning may be in essence defined as a process. Because a single picture of an ongoing process is unhelpful in understanding the dynamics of transformation, research methodology must be carefully constructed. Thus the methodological involvement of such research will be developed. So, in order to achieve transparency of our reasoning the main stages of our research will be reviewed. Third a description of the research tools including the different sources of data and the tools which have been used to interpret the raw information will be introduced. Then, the conditions of validity of our conclusions will be discussed.

One of the most fundamental dimensions of innovation is change. The same assumption may be made for learning, which may be observed through the transformation of behaviours. As a result, both innovation and learning has to be considered as a process. Considering this point, we adopted very early on a temporal perspective on our topic. This single statement has a major implication on the research design. Much research has previously faced the temporal dimension of processes, but in other fields. Moreover, because most of the innovative processes are initiated, created and driven by organisational actors on the basis of their perception of the situation, our research philosophy will be based on the phenomenological paradigm. We intend to develop and justify these fundamental choices. Then we will review the criteria of validity for this research.

²¹⁹ VAN DE VEN, A.H., POOLE, M.S., (1990), “Methods for studying innovation development in the Minnesota Research Program”, *Organization Science*, Vol 1, n°3, August, pp 313-335.

2.1. LONGITUDINAL RESEARCH ON PROCESSES

The work done by Van de Ven (1992)²²⁰ on strategy building underlined that three meanings of processes are most commonly used. First, processes are a way to provide explanation of the links existing between an independent variable and a dependent one. In the example given by the author, the link existing between the size of an organisation and its structural differentiation, a process is provided as a hypothesis, in order to explain the results found through variance analysis. The underlying theory of this approach is that the statement of covariance is insufficient to explain the reasons of the findings. A theory remains to be built in order to explain why given results are recorded. From such a perspective, the theoretical frame is very often based on a sequence of events that are logically induced by the previous one. The process provides the theoretical frame that justifies the covariance observed.

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Second, processes may be used as category of concepts. As an example, collecting data, planning and analysing refer to a sequence of numerous events achieved in order to build a planning or an analysis. From such a perspective, processes are used as a category of concepts. They are considered as constructs like other concepts. They are measured as fixed entities through the use of attributes. They may constitute the independent or dependent variable. Thus it is possible to correlate the occurrence of a process with a dependant variable. Similarly the occurrence of a process may be identified as correlated to a given state. But in this perspective Van de Ven (1992) emphasised that it is only possible to measure a change if it happens and not how it is due to occur: “To understand how a change occurred requires a story that narrates the sequence of events that unfolds as a strategy changes over time”.

Third, processes may be considered as a sequence of events which describe how the things change over time. This third approach adopts a temporal perspective. The focus is done on the succession of events and stages which affect a central subject all along the duration of the research. In this case, the problem is the content of the process and not its impact on other parts of an organisation. This change in perspective transforms both the nature of observed concepts and also the dimension of causality. The example of the garbage-can model,

²²⁰ VAN DE VEN, A.H., (1992), “Suggestions for studying strategy process: A research Note”, *Strategic Management Journal*, Vol 13, pp 169-188

developed by Cohen, March and Olsen (1972)²²¹, illustrated that decisions are not made up of a linear sequence of events but of probabilistic intersections of flows of problems, solutions, participant willingness and choices. Thus, further analysis of the process content may contribute to have a deeper understanding of the phenomena, such as the innovation, learning and decision processes. We intend to adopt this third approach of the process definition. The investigation into the process means a closer definition of their nature.

Reviewing the industrial engineering, computing and operation management approaches of processes, L. Shostack (1987) asserted that two basic concepts are common to the different perspectives. First, a process may be separated into logical steps or sequences. Because continuous successions of events temporally linked are not easy to clarify and manage, one must tend to regroup events into a succession of logical steps and/or sequences. This suggests that the identification of a given process relies on the clarification of the nature of each step or sequence. In this case, the research will have to identify the content, purpose and output of each sequence or stage included in the entire process. This means also that processes producing similar results could differ because of the number of the steps or sequences between the beginning and the final stage. In this case, the analysis will aim at counting each stage and at the comparison of their number. The greater the stage's number and intricacy, the greater the complexity of the process is.

Second, each process may be analysed through the variability of its course. Some processes are achieved through standardised progressions, reproducing the same stages for each repetition. In contrast, processes may be characterised by a great uncertainty. The result of a given stage may induce many responses which will lead to various predefined stages. In some cases, the actors themselves according to their perception of the situation and their competencies must invent the following stages. The greater the variability, the greater the divergence of a given process is. L. Shostack (1987) asserts that the two dimensions of complexity and divergence are not similar. Banking operations for standard products requires very complex processes and a very low divergence. On the other hand, the performance of a professor delivering knowledge through one course presents a very low complexity and a high divergence. In this case, each performance is bound to diverge from the previous one

²²¹ COHEN, M.D., MARCH, J.G., OLSEN, J.P., (1972), "A Garbage Can Model of Organisational Choices",

according to the student's attention and qualification.

To the dimensions of complexity and divergence Van de Ven (1992) added the temporal dimension of innovative processes. Antecedent conditions shape the present of a given process and also its emerging future. This statement leads us to consider that a given behaviour may be triggered by the current situation but also because of key events having occurred in the past. This statement suggests that research on processes must include an analysis of the temporal links between two events or behaviours.

The statements of complexity, divergence and temporal dimension of processes lead to the redesigning of research strategies. The traditional sampling approach aims at creating variance by the multiplication of single pictures. Each picture, based on a questionnaire or on the observation of the value of variables, photographs the state of a system for a given moment only. Due to the different states of variable observed in all these situations, a co-variance analysis of the factors is possible. Such a method will conclude at the existence of a link between the state of one variable and the another. On this basis, inferences of causality may be established. Such a methodology will annihilate the two dimensions of the processes.

It will annihilate the dimensions of complexity and divergence because a single questionnaire will be of no use to understand the variability of complexity given the nature of the task produced. In the case of many service processes, the number of stages will depend on the situation and the expected outputs. Because both client and staff member's behaviour is bound to vary, the number of stages may also change. Similarly, their nature could differ strongly resulting in the increasing of divergence. Therefore, the number of cases where situations may be strictly compared is due to be limited.

It will also annihilate the dimension of temporal causality. When the actor of an organisation makes a "rational" choice, it could be the result of two kinds of causality. Simultaneous causality means that according to the current state of one or many variables a given alternative will to be preferred. Temporal causality means that according to the previous conditions or states of one or many variables, which may differ strongly from the current state of the

variable, another alternative will be preferred. When, most of the time, variance analysis tries to identify correlation in a fixed period, longitudinal research will be able to provide new links by relating the present of a phenomena to its past where the current situation is rooted. One can conclude on the possibility of developing two distinct “rational” choices, depending on the temporal dimension considered. **In other words, both learning and innovation, as other processes require considering time as the source of variance of the individual and organisational behaviour. Causality may be established across time but also over time.**

The temporal perspective is the opposite of a “sample approach”, where the source of variance is based on the comparison of different individuals or situations at a given moment. Then it becomes clear that each time the research is focused on processes, one off investigations, based on singular observations will lead to partial or invalid conclusions. **Because little research has focused on the process of new service development, and because of its processual nature, the adoption of a longitudinal perspective of our topic could provide further insights and understandings. This perspective will be adopted for this research.**

The second important research choice we made was to investigate the way actors in situation design new solutions. This perspective has been clarified more broadly as the phenomenological perspective.

2.2. INNOVATION AS DESIGNED BY INNOVATORS: A PHENOMENOLOGICAL APPROACH

The overall concern of research in innovation is to understand the factors affecting the development process positively or negatively. As underlined by Easterby-Smith and Al (1991)²²² in figure n°18 below, the main research traditions relate to global philosophical positions that result in very different methodologies. Given the divergent definition of what is reality and causality, the researcher has to justify his choices according to the nature of the phenomena observed. Therefore it is necessary to define the interests and limits of the different paradigm for our research question. We intend to develop the main perspectives and

²²² EASTERBY-SMITH, M., THORPE, R., LOWE, A., (1991), Management Research, Sage Ed.

the methodologies that ensue from their adoption. Then we will discuss their interest for our research question.

The phenomenological perspective differs from the positivist frame by basic beliefs about reality, by the main purpose of the research and by the methods that will be used. Easterby-Smith and Al (1991) summarised these three broad dimensions in figure n°19.

Figure n°19: Key Features of positivist and phenomenological paradigms

	Positivist Paradigm	Phenomenological Paradigm
<i>Basic Beliefs:</i> — —	<div>➤ The world is external and objective</div> <div>➤ Observer is independent</div> <div>➤ Science is Value-Free</div>	<div>➤ -The world is socially constructed and subjective</div> <div>➤ -Observer is part of what is observed</div> <div>➤ -Science is driven by Human Interests</div>
<i>The researcher should:</i>	<div>➤ Focus on facts</div> <div>➤ -Look for causality and fundamental laws</div> <div>➤ -Reduce phenomena to simplest elements</div> <div>➤ -Formulate hypotheses and then test them</div>	<div>➤ -Focus on meanings</div> <div>➤ -Try to understand what is happening</div> <div>➤ -Look at totality for each situation</div> <div>➤ -Develop idea through induction from data</div>
<i>Preferred Methods include:</i>	<div>➤ -Operationalising concepts so that they can be measured</div> <div>➤ -Taking large samples</div>	<div>➤ -Using multiple methods to establish different views of phenomena</div> <div>➤ -Small samples investigated in depth or over time.</div>

According to the frame of analysis previously described for processes, the main assumption that must be adopted is that reality is socially constructed and given meaning by people rather than objectively determined. From this standpoint, Giddens (1984)²²³ underlined that the understanding of reality requires:

²²³ GIDDENS, A., (1984), La Constitution de la Société, PUF, Paris, in Méthodes Qualitatives et Recherche en Gestion, F. Wacheux, Economica, 1996.

- Putting back the actor at the centre of the knowledge purpose and defining it by its acts.
- Exploring structures as created by the actors and as the result of social routines.
- Accepting the actor's intelligence and their practical knowledge in their situations.

This frame of analysis has major consequences on what is meant by object of the research. It leads to consider the process not only as a change of an initiate state. The understanding of processes involves the observation of the way the actors in a given situation guide the processes. The object of research is not only focused on the analysis of what has changed. As said by Strauss and Corbin (1998)²²⁴: “instead of looking for properties, one is purposefully looking at action/interaction (of the actors) and noting movement, sequence and change as how it evolves in response to changes in context or in conditions”. Thus the investigation becomes an inquiry on the actor's logic and purposes during the series of actions/interactions. This means that the research object is focused on the people that initiates and conducts the change. It aims at the identification of the actor's behaviour, decisions and purposes during the innovative process.

The adoption of this perspective leads to search for specific set of data. The description of the facts related to the change, its nature, duration and stage, one must collect the information from the situations as they are perceived by the actors themselves. As for the situations considered as objective facts, (the positivist standpoint) we intend to substitute their interpretations by the actor involved in them (the phenomenological perspective).

This approach transforms the building of a theory and gives the observation a specific status. Rather than using data to confirm or infirm a theoretical model, the phenomenological perspective asserts that the theory will emerge from the collection of events. A theoretical construct is achieved by induction. The adoption of this choice, linked by the phenomenon we research, leads to the adoption of qualitative methodologies. As said by Strauss and Corbin (1990)²²⁵, the use of qualitative methodologies is appropriate for the categories of problems related to the actor's experience.

²²⁴ STRAUSS, A, CORBIN, J., (1998), Basics of Qualitative Research, Techniques and Procedures for developping Grounded Theory, Sage.

²²⁵ STRAUSS, A, CORBIN, J., (1990), Basics of Qualitative Research, Grounded Theory: Procedures and

2.3 INTEREST OF THE PHENOMENOLOGICAL PERSPECTIVE FOR THE RESEARCH QUESTION

Two main arguments plead for the adoption of a phenomenological perspective. First, the measurement and understanding of both innovation and learning requires integrating the temporal dimension. To conclude to the occurrence of innovation, one must measure successively the changes in the content of the service delivery. The temporal comparison between the initial way of delivering and the final state of the system, will highlight the changes in the nature of the stages of delivery and their number.

This induce the adoption of comparative methodologies focused on the analysis of the content of the offer. One example is given for service by Raesfeld Meijer, A., De Ruyter, K., Cabo, P., (1996)²²⁶. Their research design aimed at measuring change by developing limited multiple investigations all along the process. In this case, the comparison between the two states will highlight what has changed during the process. The authors aim at the identification of the transformation of social networks during service innovation. To do so, they used the sociogram methodology at the beginning and at the end of the process in order to measure the changes. Their results revealed that both communication frequency and quality have been altered all along the process. Some actors of the organisation were isolated while others gained a central and powerful position. From this statement, the authors concluded that these changes explained the failure, which occurred after the launching. Because it was impossible for isolated actors to integrate their know-how into the new service, deficiencies invalidated the launching.

By recording what has been transformed during the processes, this research design is helpful in measuring changes. However, it raised the same deficiency for explaining the reasons of change. In the example described above, it is impossible to assert that alterations in the social network are actually the result of an innovative process or of another kind of reason (social

Techniques, Sage.

²²⁶ RAESFELD M.A., DE RUYTER, K., CABO, P., (1996), "Cooperation in new service development: a social dynamic approach", *Advances in Services Marketing and Management*, Vol 5, p 193-214.

conflict, structural change). Moreover, the links between the final failure and competencies of the actors remains hypothetical. And finally, this approach can't support the reasons that led to this change. It can be hypothesised for example that the actors do not identified the competencies as being crucial when they decided (but did they do that intentionally) to change their relations.

Nevertheless, the sole statement of a change is not sufficient to conclude to innovation and learning. This statement, rarely integrated in the previous research, will lead to the adoption of phenomenological perspective in this research. Due to the intrinsic variability of the processes of delivery suggested before, the intentional character of the change is necessary to identify it as an innovation. This intention may be identified in the voluntary transformation of the process but also in the voluntary adoption of the positive results occurring through a random experience. More broadly, this refer to the position underlined by A. Sayer (1992)²²⁷. The explanation of the influence of a given variable on another one necessitates going further than the simple statement of a co-variance. The explanation to be effective and valid must explain the reasons for this influence. As developed by the author: "Merely knowing that 'c' has generally been followed by 'e' is not enough: we want to understand the continuous process by which 'c' produced 'e', if it did so. This mode of inference in which events are explained by postulating mechanisms is called retroduction" (p 107). Either way it seems difficult to conclude to the existence of a real innovative intent without integrating the actor's point of view.

The same criteria of "intentionality" must characterise the learning. As we reviewed before, individual learning requires both the transformations of behaviours and of the cognitive frames. Therefore, the sole observation of a change in the way people achieve their tasks is not sufficient to conclude to the occurrence of learning. One must analyse how they transform their representations of an event or a process. One must have a deeper understanding on what has changed from their point of view. As said by Argyris (1995)²²⁸ one must adopt that: "people design their own acts, and as a consequence, are concerned by causality and causal inference. They design a purpose, an intent and strive to achieve it. That is the reason why

²²⁷ SAYER, A., (1992), *Method in Social Science, A realist Approach*, Routledge, London.

²²⁸ ARGYRIS, C., (1995), *Savoir pour agir: surmonter les obstacles organisationnels*, InterEdition for the French

behaviour relies on what I called “design causality”, which links the intent and the action in the everyday life” (p75). Learning is due to occur when the actors transform their own consciousness of causality links existing between phenomena. Therefore, the research perspective must focus on the way actors build and adjust their actions in order to achieve their purposes. Learning must be defined from the actor’s point of view.

This focus on perceptions of actors induces the use of careful methodologies for collecting the data. If the place of the actor in the organisation transforms his knowledge about facts, then the enquiries must report the divergences and convergences in the perceptions. In the previous example of Raesfeld Meijer, A., De Ruyter, K., Cabo, P., (1996)²²⁹, the definition of what is a formal process may greatly vary, according to the position of a project manager or to another function marginally impacted by the development project. Using a similar reasoning it can be deduced that the involvement in the processes will strongly impact on perceptions. Similarly one can consider that the temporal distance from an event alters strongly its perception. In our example, speaking about a current development or a process already finished may alter the perception of the formal degree of a process. In these temporal dimensions, innovative processes may be considered as very sensitive to the production of ex-post rationalisations.

The assertion that it is impossible to conclude to learning or innovation with no information from the actors themselves lead to adopt a phenomenological perspective on the topic. This is the actors themselves that will be able to confirm what and why they have learned. This is the actors themselves that will invent solutions to the problems they identified as problems. **No learning exist apart from the actors that learn. Similarly, due to the intangible component of the service offers, it can be asserted that no invention or innovation could exist with no actors to play the game.** Such analysis leads to the adoption of the phenomenological perspective. It is suggested that the longitudinal approaches, focused on the actors and establishing comparisons between the previous and the current states, should provide the appropriate data, frameworks and eventually the appropriate results. It should increase our understanding of the service innovation.

Edition.

²²⁹ RAESFELD M.A., DE RUYTER, K., CABO, P., (1996), “ Cooperation in new service development: a social dynamic approach ”, *Advances in Services Marketing and Management*, Vol 5, p 193-214.

Nevertheless, the choice of this kind of methodologies, induced by this perspective, requires a careful design to avoid the well-recognised weaknesses of the qualitative approaches. Thus we intend first to define the research design we used to collect, analyse and evaluate the data. This part includes the definition of the units of our analysis, a description of the analytical tools we used and the source and nature of the collected data. To conclude, we will review the conditions of validity of our research, integrating the answer to the bias we listed before, in order to establish its potential contribution and limits.

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3. METHODOLOGIES

Due to the nature of our object, which entails the philosophical perspective we adopted, the research design integrates many components. Describing an inductive research process is not so easy. It is made up of a mix of tangible and intangible actions, readings, qualitative and quantitative analysis, interviews and generalisations that may appear to occur in random shape and order. **Because one of the criteria of validity is the accountability of the investigations as asserted by Yin (1994)²³⁰, we described as follows what has been observed during the research and the main methods used in order to collect the data, the main periods of data collection and production of working papers and written documents. We intend to describe each of them and then to justify their contributions to the validity of our research. We intend to describe first the overall design of our inquiries.**

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3.1. OVERALL RESEARCH DESIGN

Due to our research questions, we have been obliged to lead multiple investigations, at different levels of the organisations. This involves spending a long time spend on the collection, the analysis and the synthesis of the data into two in depth case studies. We summarised our research design as described in figure n°20.

²³⁰ YIN, R.K., (1994), Case Study Research: Design and Methods, London, SAGE Eds.

Figure n°20: The Overall Research Design

Main Purpose	Methods	Outcomes
Stage One Have a first exploratory survey in order to identify the nature of the service innovation journey.	Qualitative Survey on multiple firms/sectors.	-Two working papers , Annexe n°7 & 8, one accepted in a conference, one being submitted. -Identification of the Organisational Learning as a relevant theme for our topic. -Choice of a limited number of sectors defined through the nature of the service produced and the distribution network.
Stage Two Identify the main stages in the development process. — —	Building Two Case Studies , one in retailing, one in banking. Data collected through the use of Longitudinal Survey, mainly based on multiple qualitative interviews.	-Production of the two processes, their main stages and comparison of the two processes. -Analysis of the changes at the level of the stores.
Identify what has changed throughout the process	Longitudinal Survey on two cases. Qualitative interviews. Survey of the reports and documents related to the change.	-Identification of what has changed in terms of tasks to achieve, procedures and outcomes.
Identify How and Why the different Changes Occur.	Based on the Two Case Studies describing the different situations of decision making.	-Identification of the reasons of change.
Identify the occurrence of the main stages of the learning processes.	Based on the Comparison of The Two Case Studies describing the different situations of decision making. Participant Observation of the group in charge of innovation.	-Identification of the learning loops all along the innovative journeys. -Observation of the outcomes of learning.
Identify the different means used to learn during the innovative process.	Based on the Comparison of The Two Case Studies on different situations of decision making Participant Observation of the group in charge of innovation.	-Listing of the different learning means and their interest related to the problem encountered.
Provide Internal Validation of our statements	Design of one Research Committee for each company involving the General Manager, Executives in charge of Innovation Projects	-Presentation of main statements through the use of written short reports and formal presentations. -Agreement on the collection of data, interviews and methodologies.

We intend to develop and argue on the different methodologies we used and the reasons of their choice related to our research question.

3.2. STAGE ONE: INVESTIGATION ON NEW SERVICE DEVELOPMENT.

The first research proposal was validated in April 1995. It proposed to identify, through a quantitative investigation, the success and failure factors for service innovation. Because very little research had been published at this period, the identification of independent variables influencing the final results was difficult to identify clearly. Further investigation on the literature revealed a global ignorance of the nature of the process itself. Therefore, we decided to change our initial design in order to collect more information about the nature of service innovation. The acquisition of data on the content, nature, duration and involved actors was achieved through a first qualitative approach. Figure n°21 describes the research design we used in order to achieve our first purpose.

The use of qualitative surveys in order to produce exploratory results has been underlined by many authors. As asserted by C. Hakim (1987)²³¹, it is well admitted that the qualitative interviews are well adapted when very little is known on a topic, which was the case in service innovation. Any research had been done previously on a multiple sector basis. The nature of the entire process was mainly ignored. J. Morse (1998)²³² asserted that “grounded theory”, based on interviews, is relevant for the research questions because it focuses on processes and experience over time of change which may have stages or phases. N. King (1994)²³³ asserted that the qualitative interviews are most appropriate where “the individual historical accounts are required of how a particular phenomenon is developed”. Therefore the interviews were a very good means of collecting the experience from senior project managers. They provided a database focused on the nature of the events linked with innovation programs.

The interviews were semi-directive and lasted around one hour and half. They began by a short description of the intent of the interview and by a description of the position of the respondent in the organisation. Then we began the interviews with open questions about innovation like: “how do you define innovation in your activity...”, “what is your interest in innovation....”, “from your perspective are there many kinds of innovation.....according to

²³¹ HAKIN, C., (1987), *Research Design*, London, Routledge,

²³² MORSE, J.M, (1998), “Designing Funded Qualitative Research”, in *Strategies of Qualitative Inquiries*, N.K. Denzin and Y.S. Lincoln Eds, Sage.

²³³ KING, N., (1994), “The Qualitative Research Interviews”, in *Qualitative Methods in Organizational Research*

which kind of criteria...". This brought us a lot of information about the internal and environment factors that appeared to be associated to the first impetus in the development. This questioning also uncovered what the respondents considered as being innovation or not.

We then asked the respondent to focus on a recent development process where he/she had been involved. The purpose here was to collect information about the main stages and notable events that influenced the course of the project. As the overall intend was to identify the topics that the respondents linked to the development of new services, the first questions in the interviews remained very open with short questions such as: "did you identify notable events during the development...", "Who was involved at this stage of the development...". Then we orientated the interviews around the respondents about the main reasons for success or the failure of a development project in services: "If you had to redesign this service, what would you change in the development process....". Those parts of the interviews contributed greatly to the understanding of what was the overall development process, its main stages, the major contributors to the development and the first success and failure criteria.

Three broad categories emerged from those first interviews. First data was linked to the internal and external environment that influence the decision to launch new offers. The second category was linked to the main stages of the development and to what was produced at for each stage. The third category of information was related to the main decisions the managers had to take all along the process. There we collected part of the know-how they used to contribute positively to the development. Then we also collected information about the department and people that were involved in the design of the offer. For each of those contributions we obtained some information about what lead the organisation to associate those departments and persons in the project

Figure n°21: Exploratory Research design

	What has been done
<u>Purpose</u>	-Qualitative Interviews focused on Service Innovation in order to identify: .The nature of the innovative process. . The main stages. . The main actors involved. . Establish the relevancy of inter-sectorial comparisons . Collect different point of views in order to enlarge the scope of events associated with innovation. . The processes and actors involved and main events.
<u>Sampling</u>	-Twelve service firms, selected according to the degree of intangibility of their outputs, the importance of distribution network, the nature of service sector: 4 finance companies, (customer and business banking, insurance and loans for buildings), 4 individual and collective catering firms, 1 accommodation industry, 1 adult training organisation, 1 urban transportation, 1 industrial service.
<u>Data Collection</u>	-Semi-directive interviews -Operations manager, Head of marketing department, product managers, chief executive, project manager. -All interviewees were selected because they had managed an innovation project. -Interviews recorded on tapes
<u>Data Interpretation</u>	-Transcription and text analysis. -Coding of main events

This first part of the research resulted in two working papers. They have been written in order to obtain feed backs from the research community about the preliminary investigations and are presented in the annexes n°7 and n°8. The first one aimed at highlighting the organisational change associated with service innovation. The second research paper summarised the other findings. Four broad dimensions emerged from this first stage: The differences between sectors which make them difficult to compare, the weight of the distribution network in all the dimensions of the innovation, the organisational impact of innovation and the occurrence of learning throughout the process.

Given their nature, the results were insufficient to be generalised. Nevertheless, we

summarised the results into two broad conclusions. First, the creation of an appropriate sample of firms was crucial to achieve coherent results. Due to service heterogeneity, the choice of the firms selected in the final sample could strongly influence the final results. This required reducing our initial choice, which was to analyse service innovation whatever the sector might be. The definition of the scope of investigation was elaborated as described below.

The second broad conclusion was that, whatever the development might be, a common phenomena appeared to characterise the innovative process. Individual and collective learning seems to be one of the shared concerns of the interviewees. Learning seems to play an important part in the strategies of the actors in charge of the innovation. It appears as conditioning behaviours of explorations. The accumulation of experience seems to be at the basis of the decisions taken all along the creation of the new offer. The occurrence of a set of complex and co-ordinated behaviours appears to be based on a collective learning where each of the actors tries a design and evaluates the outcomes. Given the frequency of events directly or indirectly linked to learning, we decided to focus our research on this aspect of innovation.

Although they produced interesting results, this sole research presents the weaknesses of the exploratory research. Due to the choices of sampling, situations appear to be very different. Both nature and size of the sample have made any generalisation of our results impossible. The inter-sectorial comparisons have revealed fundamental differences. The sampling of one respondent per organisation made the triangulation of the data impossible. No theoretical model was tested. Nevertheless, those broad conclusions led us to adopt for the second part of our investigation a longitudinal survey on development process. They resulted in two case studies, built on the data collected during the longitudinal survey. With this in mind, the following research design based on case studies has been created.

3.3. STAGE TWO: CASE STUDY METHODOLOGIES.

Two statements led us to adopt a case study methodology for our research. The first stage of our research highlights the processual nature of the service innovation. Because no research had been carried out, the interest of catching the whole process became necessary to understand its own logic. Moreover, the differences of the development patterns between different sectors remain to be investigated. This suggests that comparisons should also be relevant. The second statement ensues from the apparent interest of the organisational learning theory for the kind of events we analysed during the first stage. Such kind of events involves adopting a temporal perspective as we highlighted in the previous chapter. Those different statements reinforce the interest of a research design based on case studies.

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Nevertheless, building a case study required interacting with complex companies. This requires carefully designing the research processes. As we said previously, the simple identification of who is doing what at which moment and for which kind of reasons is a difficult task when the actors are disseminated within along the organisation. Faced with this complexity, we adopted many principles that guided our interactions within the organisations. The research design is made up of six main decisions which are the interest of a case study for our research question, the unit of analysis for the collection of data, the purpose of the longitudinal survey, the choice of the sectors and of the companies within the sectors, the choice of the innovative projects and the presentations of the validity conditions and limits of this methodology..

We will develop the design we adopted in order to increase the accountability of our reasoning. This requires introducing the interest of the case study methodology for our research question and explaining the way we built and analysed the data.

3.3.1. Interest of case study for our research question.

The use of cases for research has been well developed by many authors who emphasised their interest and relevancy. Given the research questions listed above, the question of “how” the

development processes occur remains to be investigated. Similarly, the reasons of its occurrence and of its main stages are to be defined more clearly. Yin (1994) underlined that amongst the different research strategies, the case study research fit very well into the “how and why” forms of research questions over which the investigator has little control. Moreover, the case study seems to fit with research inquiry focused: “on the understanding of contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident”. From this perspective, the case study must be considered as a comprehensive strategy, where the observation and collection of data is structured around the phenomenon. This ability to catch the complexity and the “embeddness” of the social events increases its interest for the kind of research question we choose. J.F. Hartley (1994)²³⁴ emphasised that the strength of this research strategy lies in its ability to explore the social processes: “A case study allows for a processual, contextual and generally longitudinal analysis of the various actions and meanings which take place and which are constructed within organisations”. Those statements underlined the fit existing between our research question and the case study research.

The capacity to cross multiple cases reinforces the interest of this strategy. Looking for the rational of the new service development entails to look for patterns of behaviours, common to many processes. The procedure of comparison will provide the possibility to cross the similar predictions and results. This should either lead to the identification of patterns of behaviour or to an extended view of the development strategies implemented by the actors. In this perspective, the capacity to replicate cases will increase the knowledge and understanding of the innovative behaviour. Thus we developed a research strategy based on comparative case studies.

As highlighted by R Stake (1995) and J.F. Hartley (1994), the first methodological outcomes of the case studies are to choose an initial theoretical framework, to choose the case studies, to manage the collection of data and finally to analyse them in order to generalise the results. We intend now to justify the selection of sectors, companies and development projects and to explain the way the information has been collected.

²³⁴ HARTLEY, J.F., (1994), “Case Studies in Organisational Research”, in C Cassel and G Symon, Qualitative

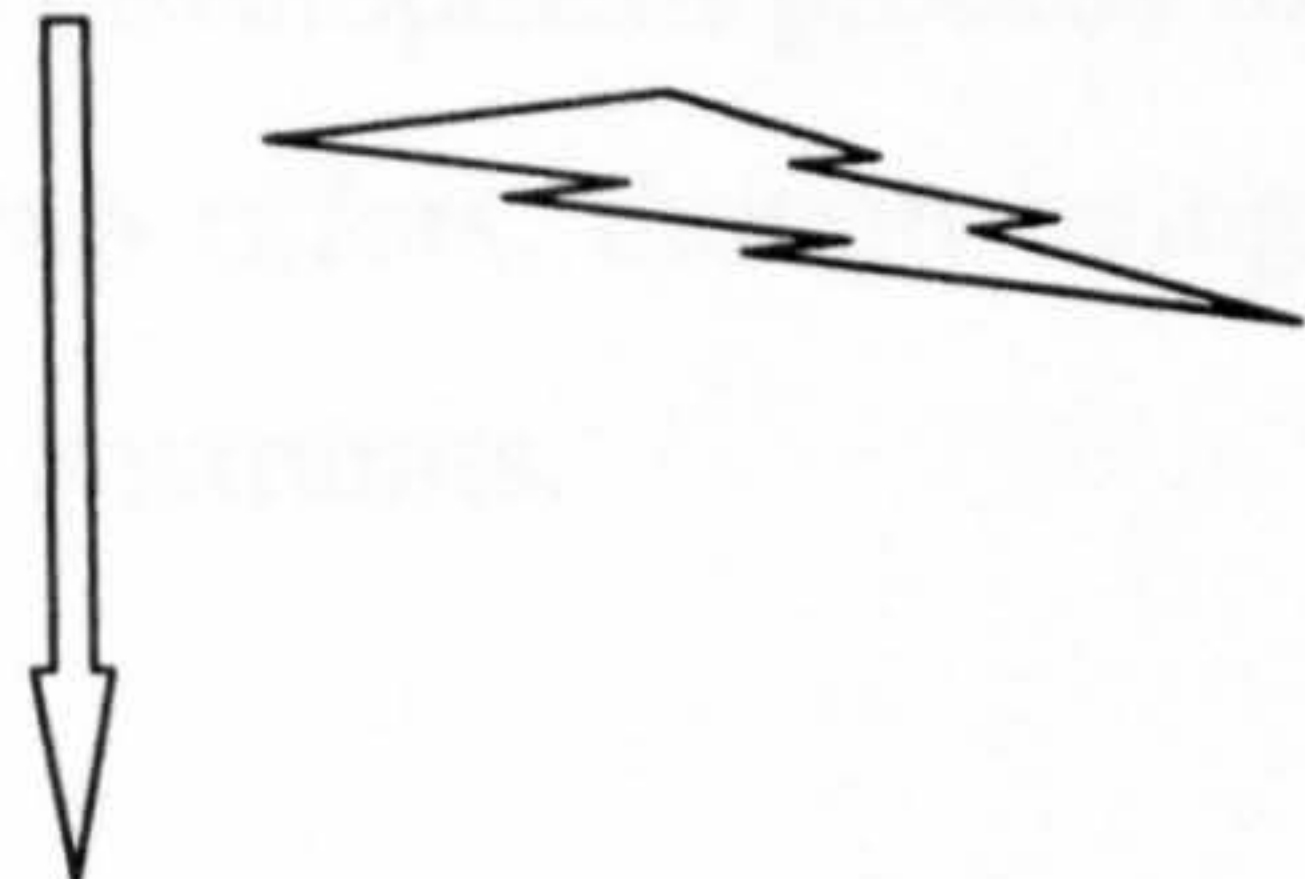
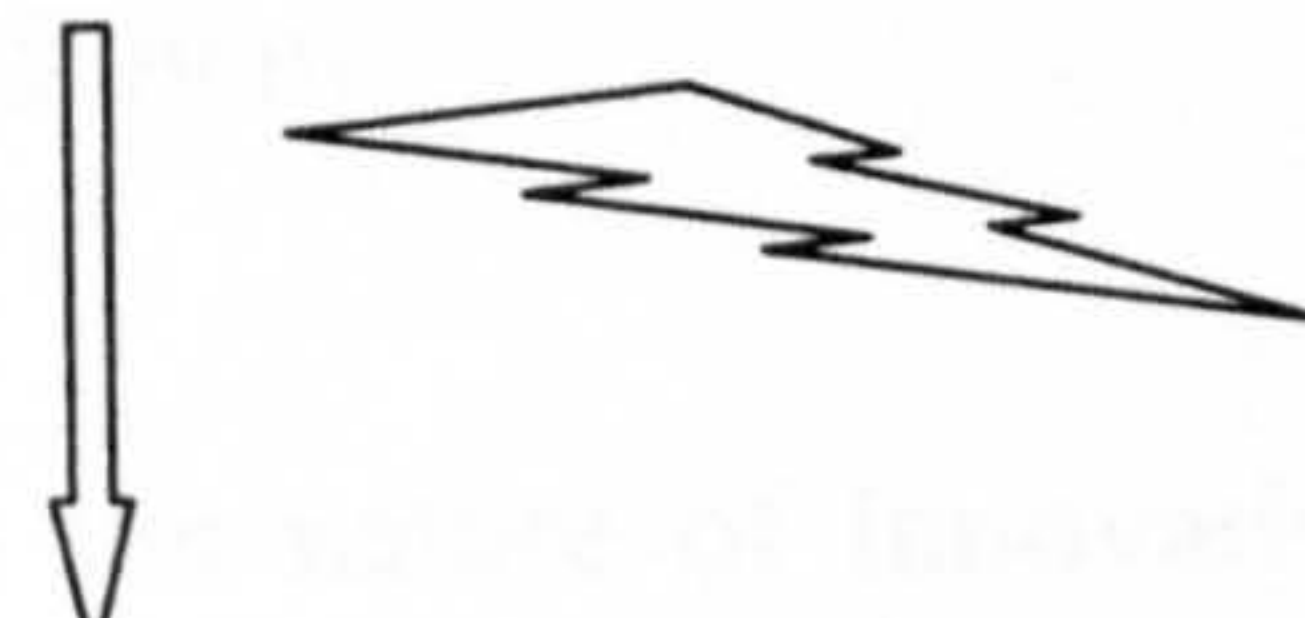
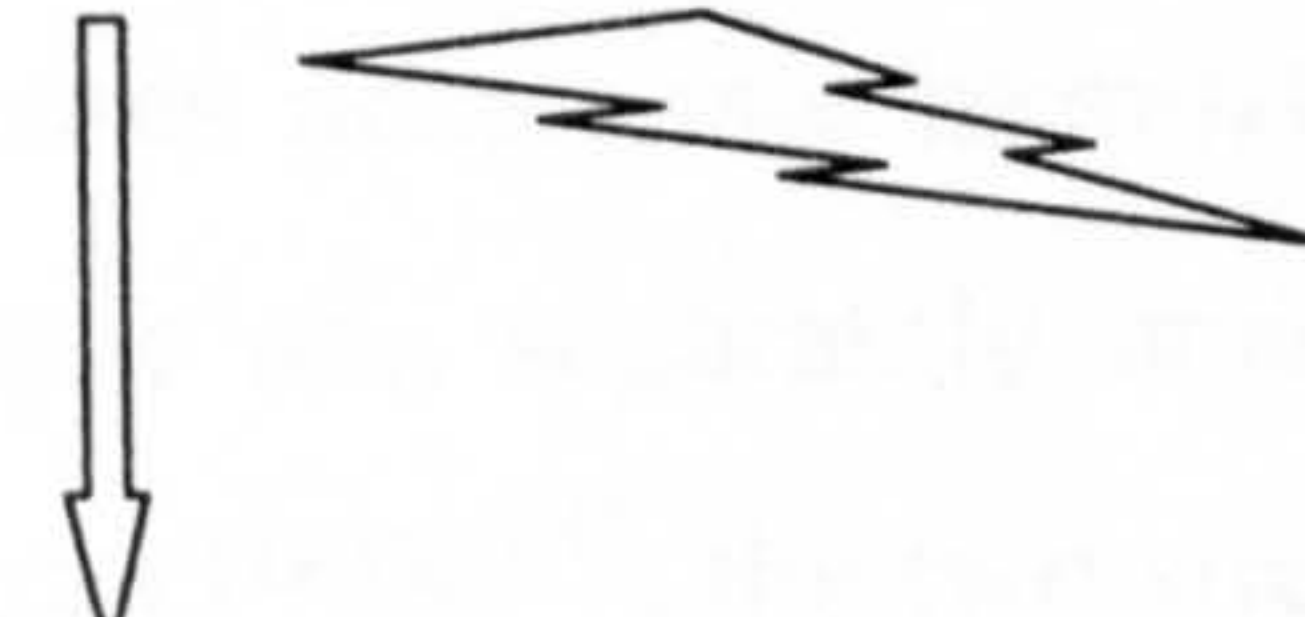

3.3.2. The Choice of Sectors.

According to the service diversity underlined in the first part of our research, an overall investigation, including all the service sectors would have led to dead ends. Thus we were obliged to focus our purpose on one particular kind of service as summarised in the figure n°22. Then two basics choices were possible.

The first one was the investigation of innovation within a given sector. It may be one of the sectors defined in the nomenclature given in the Zeithaml and Bitner's book (1996). This choice provides the opportunity to confront similar firms, facing the same environment. They have to develop similar services and by then intra-sectorial comparisons may be considered as relevant. Nevertheless, the intra-sectorial approach entails aggregating a huge diversity of companies. According to their size, markets, strategies and client segmentations the comparison based on the sole sector criteria would appear confusing by melting heterogeneous components. Moreover, the choice of a given sector should have limits in the generalisation of the results. As their extension to other sectors would appear as limited, this choice would lead to the production of limited conceptual frames.

The second possibility relies on the exam of similar processes extracted from different sectors. In this case, the unit of analysis is defined through the process than through the kind of companies. In such a perspective, the service innovations must be selected according to their characteristics. The first qualitative inquiry revealed that some sectors, though different as may be retail banking, hotel or retailing, may have similar development characteristics. The adoption of the service characteristics as segmentation basis will provide potential homogeneous segments. Then the possibility to set valid comparisons should bring a better understanding of the innovative process and of its facilitating conditions.

Figure n° 22: Decision Tree to Select Homogeneous Development Processes.

<u>Homogeneous Unit of Analysis</u>	Sectors or Innovations, which we will necessitate separate research
<p><i>Step 1</i></p> <p>Overall Change in Component of the Offers</p> 	<p>Change in the Tangible Part of the Service. <i>-Innovation based on the renewal of the range of products or in the creation of new tangible products (for example in retailing, the creation of new "own brand" products)</i></p>
<p><i>Step 2</i></p> <p>Standardised Process</p> 	<p>Customised processes <i>-Consultancy sector</i></p>
<p><i>Step3</i></p> <p>Non Technological Change</p> 	<p>Mainly Technological Change <i>-Electronic Commerce</i></p>
<p><i>Step 4</i></p> <p>Networked Activities</p> 	<p>Single Point Delivery <i>-Mobile Phones Companies, Home banking</i></p>
<p><i>Step 5</i></p> <p>Banking - Retailing - Hotels, Amongst Other</p>	

Some examples will illustrate the two possible choices. Though being in the same sector of banking, the development of a new kind of insurance of a traditional bank or a Home bank should be expected to be different. In the first case, the innovation process is due to require

the implementation of procedures for the extension within the numerous outlets which will have to learn to sell them. The success will probably have to do with existing knowledge, with willingness of front office people to sell this product to the right segment of clients. The sales approach may require the client may visit the agency. Then the content of the offer will have to provide responses to all those problems. A different approach is required in the case of home banking innovation which will have to cope with dematerialization of the delivery and thus will be very sensitive to client's confidence. The nature of distribution network in this case will transform the development process to the point that two incomparable products may be created. Then the two offers, though being in the same sector will probably be different according to different constraints.

According to those statements, we tried to split the service innovations according to their intrinsic characteristics rather than by their related segment. We propose below a classification of possible choices. A decision tree ensues from this analysis as presented below and we intend to justify each of them.

The first step isolates the nature of innovations we intend to analyse. As said before, the tangible part of the services needs to be investigated with the concepts generated by research on techniques as procurement, purchasing and finances amongst others. Investigations on the relationship and processes necessitate mobilising a different conceptual field. Therefore, the two fields must be split and separately analysed. As highlighted before in Fulgsang and Fussing-Jensen research (1998)²³⁵, the two streams were equally represented in the registered innovations. Compared to innovation in tangible products, very little research has been done in the processual and relationship stream. The investigation of this branch will be adopted as a major orientation.

The second step distinguishes standardised from customised processes. The nature of the innovative process should be very different. In one case, the service must be considered as the result of the interaction client-employee. It varies from one client to another by being adapted to the expressed needs. The offer is co-constructed and by then will be difficult to identify, or

²³⁵ FUGLSANG, L., FUSSING-JENSEN, C., (1998), Representation problems in service innovation: comments based on a survey ", 5th International Research Seminar in Service Management, IAE Aix en Provence, pp 250-264.

to track. The second process is orientated to the renewal of existing procedures and to their replication. Then a stage of creation should precede an implementation stage as important for the success as the first one. Because research already investigates the customised approach of services (F. Gallouj, 1994), we decided to concentrate on the renewal of standardised or industrialised part of services.

The third step separated Technological from Processual-Relation innovations. The first one will use the economic models of technological innovation with its necessary adaptation to the service context. As highlighted by the research of Barras (1986), the development of a service innovation based on technology is characterised by a specific adoption cycle. As the change in the processes or in the relationship is not necessarily based on technological change, the two streams were equally represented in the registered innovations. Compared to innovation in tangible or intangible products, very little research has been done in the processual and relationship stream. The investigation of this branch will be adopted as a major orientation.

The fourth step is linked with the existence of a distribution network. The intangible part of the service induces that each outlet will have to reproduce given processes. This suggests that the adoption process should influence the content of the offer for many reasons. First, as said Lewis and Seibold (1993)²³⁶, the intra-adoption of innovation generally induces adaptation. They asserted that people concerned in the implementation will adapt it on two dimensions. The fidelity concerns the degree to which the innovation in use (as it is really implemented) is fitted with the initial intent of the development team. The uniformity is the degree to which the innovation in use varies across the individuals and user groups. Moreover as said by Klein and Speer Sora (1996), the implementation of an innovation is a function of both the strength of the organisation, the implementation of an innovation is a function of both the strength of the organisation's climate to implement the innovation and how this innovation matches user's values.

Those works amongst others underlined the modifications of the innovation that will appear during its adoption in the distribution network. This means that the development process will differ according to the importance of the network characterised amongst others by the number

²³⁶ LEWIS, L.K., SEIBOLD, D.R., (1993), " Innovation modifications during intra-organizational adoption ", Academy of Management Review, Vol 18, n°2, pp 322-354.

of outlets, their geographical distance and the degree of centralisation. Therefore, two separate samples have to be distinguished. The first one regroups firms characterised by their important distribution network. It is made of retailing banks, retailers, and hotel amongst others. The second cluster is made of one single distribution point. Home banking or Portable illustrates the concentration of the distribution in one single geographical site. We tried to split the two clusters and to investigate the first cluster.

The fifth step consists in the choice of one or many sectors. The choices of similar services, even chosen in different sectors, open the opportunity to confront innovative behaviours and to generate a theory more easy to generalise. If the development process appears to present similarities in different sectors, then it will be possible to conclude on its interest for all the similar kinds of services, whatever the sector might be.

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To conclude on this selection, the transformation of standard processes, non-directly dependent from the technological change, and delivered through a network of physical outlets present research and operational opportunities. The first one is that the standardisation of the processes makes the innovation easier to identify and track when this task is quite impossible to achieve in some sectors. Second, because of their standardisation, the comparisons between different processes will be possible. The number and nature of the main stages will be possible to compare. The involvement of the main actors should be crossed. Moreover, the adoption of new procedures in outlets has never been explicitly investigated as reviewed in the literature review. A huge number of outlets provide opportunities to increase the generalisation of the results through the replication of given situations on numerous places. Finally, inter-sectorial comparisons provided the opportunity to increase the generalisation of the findings.

3.3.3. The Choice of Service Companies

According to the definition of our purpose, as defined above, we selected two service companies, one in retailing, another in banking. This choice was correlated with the existence of an ongoing innovation project and their interest in participation of the research. As we will see, this last point is of first importance to assess the interest of information delivered by the

actors during the process. We intend to introduce their main characteristics in order to highlight similarities and differences.

A- CORA: The context of retailing

Here we aim to introduce the company, to present the main trends of the French hypermarket segment and their strategic involvement. Those statements will constitute the environment and the justification of Cora's interest in our research. Then we will describe the company more specifically, including its main organisational features. Then we will provide a short description of the innovative project as it was formulated by the executives at the beginning of the research.

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Cora is a well-known retailer in France. It is mainly located in the east part of this country but also present in Belgium, Netherlands and Hungary. The company was created in 1969 and benefited from the huge development of the hypermarkets segment during the past decades. The global Turnover of this company was up to 70 Billions francs in 1998, including the different sectors and the international development. This turnover was made under many different brands and specialised subsidiaries. The brand CORA is used for hypermarkets which represent 60 outlets in France with a medium size of 8 700 m². The other brands for the retailing activity are Match, for the 210 supermarkets spread over France, Belgium and Luxembourg, Truffaut for the 23 garden centres. Our research focused on the hypermarkets of the French retailing branch.

The French retailing market may be considered today as mature. For 1997, the creation of new outlets stopped at 1.100 hypermarkets. The same stability may be observed for supermarkets. The saturation of the market is one reason for this stability. The most interesting commercial sites have already been built. But it is also due to the change of the French legal system. Promulgated in 1995, the Galland law drastically restrained the possibility to open new stores. The creation and the extension of a new outlet have been conditioned by the agreement of an administrative commission, the CDEC. The store's size under which the authorisation is required has been reduced from 1 000 m² to 300 m². The companies interested in the creation or an extension of a store must produce an administrative file, reviewing the impact of the

opening on the existing commerce including small and specialised shops.

Those factors have resulted in a reduced rate of new stores opening. This change results in three major strategic results. In order to develop their turnover, the major French retailing companies strove to increase their development abroad. The creation of new stores in the eastern European countries may be considered as the indirect result of this change. For example, Carrefour, leader on the French market, has developed more than 300 outlets over the past three years and realised in 1998 more than 40 % of its turnover abroad.

The second major change was the tide of fusion and acquisition that resulted from this situation. In 1997 Promodes tried a hostile bid over Casino. This trial failed and as an indirect result, Carrefour and Promodes merged during the end of 1999. The new group is expected to realise a turnover of more than 320 billion francs. Cora and Casino merged their purchasing organisation in 1999 in order to achieve economies of scales. Leclerc and Système U did the same by merging their purchasing organisation.

The third major change was the focus on the stores themselves. As gain in market share could no longer result from the network's development, the increase of commercial offers within the existing stores became the priority. For example, new services as insurance, travelling, entertainment tickets spread over the stores. The diffusion of private payment and credit cards, printed and managed by the store's company was encouraged. More broadly, all the means able to increase customer loyalty has been developed. The focus on service innovation resulted from this change in the environment.

CORA's turnover in the retailing activity in France is 50 billion francs. Those considerable results obtained in retailing have been achieved through a strong development in the number of the outlets over the last thirty years. The same development is under way in foreign countries, particularly the Eastern countries where the group has implemented more than 6 hypermarkets of more than 10.000 m² over the past three years. Though this turnover may appear to represent a medium market share in France with no more than 5 % in the hypermarket segments. In comparison to the leader of the market, Carrefour, Leclerc and Intermarché exceed 15 % of the French market. As it is generally admitted that retailing is very sensitive to the size effects, the growing concentration of the competitors had a great

impact on the strategy of CORA. Two main objectives resulted in recent major changes. First, Cora concluded an alliance with the group Casino. This change aims at the increase of the commercial pressure on the suppliers by the acquisition of a market share of more than 7 % of the French market. As a result a new purchasing organisation, Opera, was created in the beginning of 1999 with the objective of buying the products for the two partners.

The second decision was to reinforce the positioning of the brand. As most of its development has been achieved through direct investment rather than through the extension of franchising network, the Cora outlets are recognised for a qualitative positioning. Clean stores of large size of more than 10.000 m², the large and qualitative assortments, the repositioning of the own brands products, the emphasis on customer satisfaction provides a tangible difference with competitors. Those efforts are also visible in the advertising investments with more than 130 million francs invested each year.

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Given the size of this company, more than 16.000 employees, the organisation has a major impact on the way projects may be driven. Very early, the management principles emphasise decentralisation as the means to increase reactivity and customer satisfaction. Only five hierarchic levels may be observed: the general managers, the store managers, Department coordinators, department managers and employees. As a result of this choice, store managers are very powerful in the daily decisions related to team management (around 500 employees per store), commercial decisions (local assortments, promotions calendar, pricing positioning), and reaction to local competitors actions. Each of them is considered as responsible for the turnover and for the store's profitability. In order to gauge their results, a report sheet is provided each day, week and month by the computer department, in order to compare the stores results for the same days of the previous year. This enables to rank the best stores and departments according to their turnover. This information is available for all the staff of the stores and also to the General Management. As they are assessed according to these results, store managers are also in a position to accept or refuse an innovation depending on its interest for the local context. Moreover, they are often in position to initiate, encourage, implement innovations created by their local team.

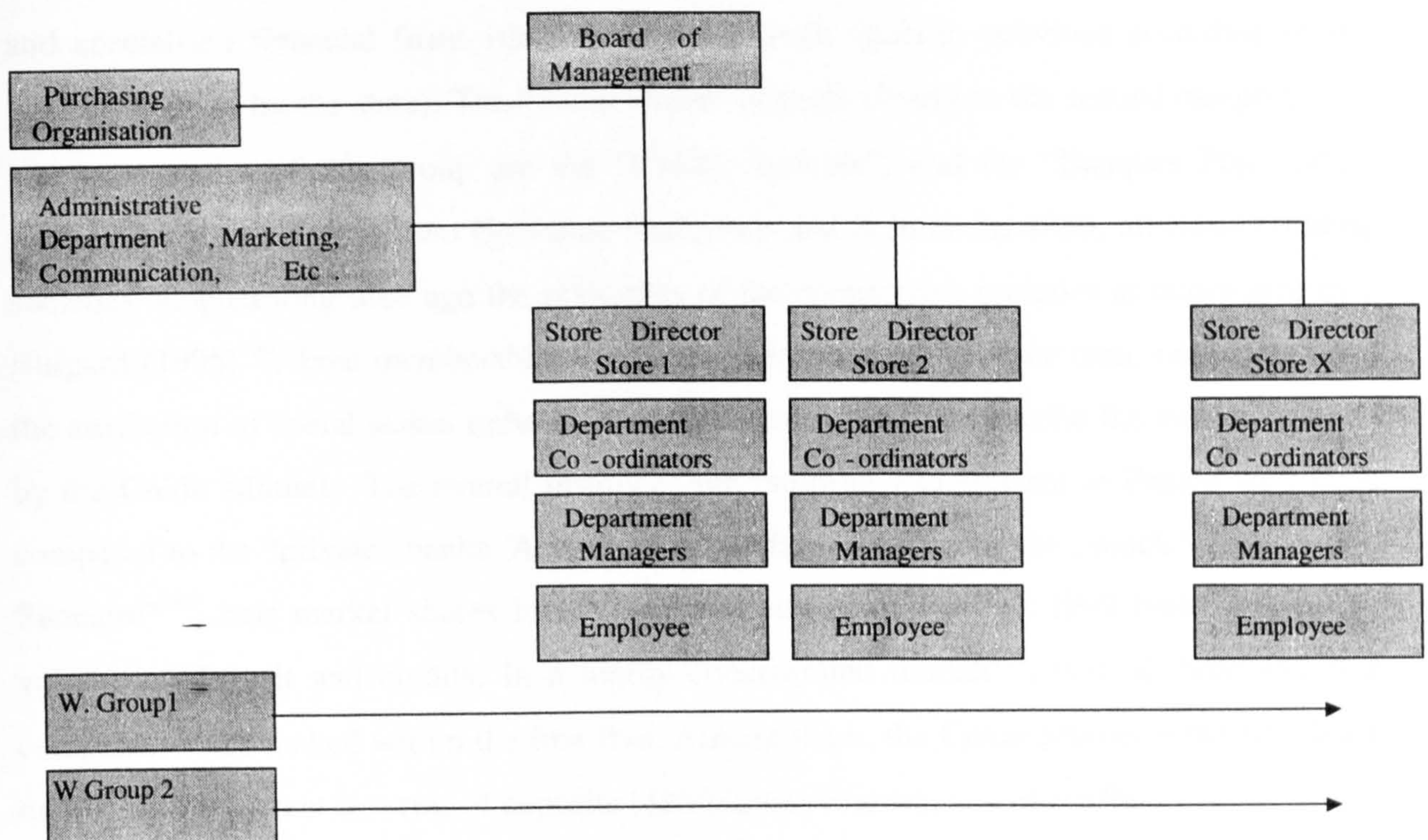
This hierarchic and formal organisation has been considered as insufficient to cumulate multiple experiences of the department managers. Moreover, some functions such as

purchasing or communication requires a strong co-ordination between multiple actors. In order to achieve those specific tasks, multiple groups named “Files”²³⁷ has been created. Each of them is focused either on a department whether it may be textile or bakery, or a specific activity such as the CORA credit card. Each of the “working group” is managed by a store manager and includes around 15 members, co-ordinators, department managers, and employees coming from the different stores. Each “working group” is supposed to analyse the given activity, to propose improvements and changes and to recommend them to all the stores. This recommendation remains at last the decision of each of the store managers which can promote or refuse its implementation. The organisation is summarised as shown in figure n°23.

This organisation increases the complexity of the innovative projects. The different events of the project may occur at each level. Innovation may be initiated at the level of the departments of the store, of the other departments or even at the strategic level. Similarly, the implementation of an innovation may be the concern of multiple outlets having diverging interests. In the project we followed, all of the actors were involved. The development of the “Univers”, a reorganisation of the non-food part of the store, involved all the levels of the CORA’s organisation, from the strategic level to the employee and final consumer, including the purchasing organisation, the computer department and the communication. If the number of people concerned by this change is considered, then one can speak of a strategic change.

²³⁷ The French word used is “File”, which refers to “working groups” specialised in a specific theme.

Figure n°23: Organisation of the CORA French hypermarkets division.



B- CREDIT MUTUEL d'ANJOU: The context for banking

Though it belongs to another segment, the CREDIT MUTUEL d'ANJOU presents many organisational similarities with CORA. We intend to introduce the French banking market for final consumer, its main strategic changes. Then we will introduce the organisation adopted by this bank to design and sell financial products.

Two major laws defined the way the French banking system worked over the past forty years. The banking law published the 24th of January 1984 defined the activity and control of the credit firms²³⁸. At last the law published the 16th of July 1992 defined the adaptation of the legislation of the insurance and credit to the rules of the European Community. This strong legal frame, able to protect the client and the State against the effects of potential

²³⁸ By doing so, It replaced the previous law, published the 13th of June 1941, which defined both the nature of the financial firms and also the main operations they can achieve.

bankruptcies, implemented the institutions that supervised the banking companies. Moreover, it recognised four categories of financial firms: banks, building societies (*banques mutuelles et cooperatives*), financial firms (specialised in leasing, real estate financing, factoring, etc...) and specialised financial firms (they are due to credit specific activities according to the mission defined by the state). The *Crédit Mutuel* belongs clearly to the second category. The main companies of this group are the “*Crédit Agricole*”, and the “*Banques Populaires*”. Created long time ago by two Germans, Raiffaisen and Schulze in 1850, all those building societies adopted long time ago the principles of the cooperative societies as underlined by J Burgard (1995)²³⁹. Free membership, the democratic principle of “one man, one voice” and the attribution of social stakes rather than capital shares may characterise the system adopted by the *Crédit Mutuel*. The overall results of the building societies are in France very good compared to the “private” banks. According to the figures given by the French “*Commission Bancaire*”²⁴⁰, their market shares increased constantly from 1986 to 1999 both in terms of volume of deposit and credits. In a highly concentrated market²⁴¹, two of those building companies were ranked within the first five. Among them, the *Crédit Mutuel* is the fifth bank on the French market in terms of deposits (428 billions Francs), and of credits.

Due to the guiding principles, the organisation is split in three main levels. The interface with clients is the level of local office. Each office is a cooperative society which capital is made by the stake of each client. The *Crédit Mutuel* has 1800 local offices displayed all over France. These local offices are regrouped into 19 regional groups of variable importance. Each of these groups are made of a regional office, in charge of the operations (cash management, management of the financial services, management of the network of computers, etc...) and of a federation, which is in charge of the control of local and regional office. This is where decisions are taken. The third level is the national confederation that regroup 19 regional federations. This level has been imposed by the banking law of 1984. It is also an important mean used to organise convergence in the local policies.

This research focused on the regional federation of Anjou. Compared to the biggest regional

²³⁹ BURGARD, J., (1995), *La banque en France*, Dalloz, Paris, pp 79.

²⁴⁰ Organisation in charge of the regulation of the banking system.

²⁴¹ In 1997, the five biggest banks represented 40.3% of the market compared to 28% for UK and 16.7 for

federation of the east of France, the Credit Mutual Anjou is medium sized with more than 245 360 stakeholders and clients. The overall results are satisfactory, with a constant progression of the deposits (+7%; 98/97), of the credits and also of the insurance products that represent more than 12 millions francs in 1998. As noticed before, the organisation adopted the democratic principle of cooperative systems. The 633 representatives of the 144 179 stakeholders are in charge of the decisions of each of their local office. However, the 743 employees of the federation are in charge of the day to day operations. The marketing, advertising, operation management and strategic planning exist only at the federation level. This suggests that the regional federation has the power to design the proposition which may be approved by the delegates of the local offices. At the moment where this research began, the national confederation has nominated the Anjou federation as project leader for what was initially called “rémunération-facturation”. The detailed content of the project will be detailed in the next chapters.

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3.3.4. The Choice of the Development Projects

We have selected our innovative projects according to many goals. First the sectors have been chosen according to the previous analysis. We investigated amongst many retailers, bankers, and hospitality companies, looking for companies having initiated innovations or intending to set up new projects. Second, as our methodology requires following an ongoing project, we tried to select companies according to their current development. Third, we negotiated the possibility of following the entire project, including the interviews of employee at all levels, the access to all relevant documents and the possibility of sending questionnaires. This considerably restrained our selection. Nevertheless it was possible to find two companies who accepted the entire conditions and who were interested in the research project.

In the two cases, the research project was introduced and fully developed for the chief executives of the two organisations. We presented our intent and the potential benefit of our work for its managerial part. Then we specified the conditions required to be able to produce reliable work from an academic point of view. An agreement was formally taken in both

cases. Given the free access to the information, we must undertake a restrained diffusion of our work.

A- Cora Project Description in Brief: les “UNIVERS”.

The first research proposal was done during a first meeting in April 1998 with the chief executive of the company. As I explain the kind of project I was looking for and the purpose of my research, my contacts proposed to work on an ongoing project, “le projet Univers”, which began in September 1994 and was supposed to be achieved at the beginning of the year 1999. It aimed at increasing the store’s attraction again specialised retailers. At last, though Cora began to work on this project approximately one year and half before its competitors, Carrefour implemented it in the stores in 1998, one year before the CORA stores. Those events were interpreted as one weakness of CORA by the chief executive. This failure was the reason of the acceptance of my research project.

The “Universe Project” aims at the improvement of the non-food part of the store. In order to increase their turnover, the French hypermarkets enlarged their assortment, initially built around the food departments. Many departments have been successfully added as the textile, the games, do it yourself, gardening, sports, books, electric appliances, hi-fi, computers and jewellery. Each of those departments built a wide but short assortment. The choice of the products was based on the most profitable products or those having a fast turnover. This fast development achieved during the 70’s and 80’s presented two major weaknesses.

First, those progressive implementations have been done without co-ordination between existing departments. Each one was implemented according to the available space and to the store design. As a result, one department, the jewellery for example, was located near the textile in one store and near the Hi-Fi in another. This random design led to a network of heterogeneous stores. Moreover, the final design respected neither the customer route in the store nor the logic of classification of goods. The example of the coffee segment illustrates the tacit guidelines used to create the offers. Initially, the suppliers of coffee, coffee filters and coffee machines are different. On the one hand, coffee suppliers are regrouped with chocolate and tea providers, which are the same in some cases. Those products are included in the same

shelves, which is part of the grocery family. In order to manage this category of product, the stores created a department manager and a purchasing manager, which are responsible for their results. On the other hand, coffee machines have been regrouped with the suppliers of electric appliances, which may be electric kettle but also iron or hair drier. As someone must manage the coffee filters, which belongs to another kind of suppliers, they have been implemented with households. As result, this organisation structured around the suppliers obliged the client to walk in three different places around the store, in order to find coffee, coffee filters and coffee machines. At last, this proliferation of the supply leads to duplicate the same product in many different places.

The second weakness appeared at the end of the 80, with the strong increase of specialised format. Their principle was to challenge hypermarkets by offering a specialised and extensive assortment, built on a theme. Entire leisure sectors were concerned with brands positioned in Sports (Decathlon), Culture (Fnac), Gardening (Jardiland), Hi Fi and electric appliances (Darty), Textile (Kiabi), some of those brands being subsidiaries of hypermarket companies. By a special design of the outlets, by their location near hypermarkets or shopping mall, by a greater choice and also interesting prices, those new stores threaten the non-food departments of the hypermarkets, inducing reactive behaviours.

As a result of those two statements clearly identified at the beginning of the 1990's, CORA decided during 1994 to reorganise the supply for the non-food departments. This constitutes what has been called the "Universe Project". It has emerged clearly in order to transform the supply on the bases of the intuition of some well identified people. First, a consultant emphasised the opportunities of the non-food transformation. Second the intuition of the purchasing manager in charge of the buying policy for those products contributed greatly to the identification of the problem. Nevertheless, it is difficult at this stage of the description to give more details about the first goals of this project because its beginning appears to be made of the definition of the purpose itself. What can be underlined for September 1994 is that some stores made informal trials, and that some managers appeared to have intuitions about the necessity and the opportunity to transform this part of the store. The following part of the process, even before the project may be clearly named, is the innovative process itself. Thus we intend to describe it at a latter stage.

B- Credit Mutuel Project Description in brief: “SERVICE-PRIX”

It is difficult to understand and to describe the “Service Prix” project without describing its past. As most of the time, the current decisions are partially influenced by previous experience. In this case, it is difficult to understand the cautious attitude of the executives on this project without considering previous failures. We intend to develop the French legal context which influence this project first, then to describe the previous attempt of change in 1987 and then to describe the first intent of the “Service-Prix” project.

The French banking system differs fundamentally from most of the European markets on two points. The remuneration of the current account has been prohibited since June 1967. This decision was taken in order to provide the bank with the huge amount of liquid assets necessary to cover the increasing demand of long term individual credit. The second specificity was the ban of the billing of the cheques issued by the client, decided in 1935. According to the survey realised by SG2 Conseil (1997) ²⁴² those two important decisions contributed in the past to the strong increase in the opening of new household bank accounts. This situation is described as the “neither, nor” rule of the French system. The argument of equity has been emphasised many times by the customer association, the unwarranted nature of the use of checks ²⁴³ being the counterpart of the lack of remuneration of the current account.

This legal context did not refer to the billing of other financial services or products. For example the Visa credit card is billed on the basis of an annual fixed rate whatever debit or credit might be. Most of the services to households are billed. The authorisation to be overdrawn, the access to the account by Internet or Minitel are most of the time billed on the basis of a fixed rate like the credit card. This tends to create a very complex structure of tariffs where the comparison between banks appeared to be obscure or impossible as underlined by

²⁴² SG2 Conseil, (1997), “L’enjeu de l’Euro pour les relations commerciales banques et particulier”. More than 98% of the French household had a bank account in 1996.

²⁴³ The check represent more than 52% of the payment means as said by CE Haquet, (1994), “Le chèque: cent trente ans de succès, Le monde, pp 6. It is admitted that the cost of each check for a bank is approximately of 3-5 francs each, R C Mader, (1997), “Le “ni-ni”:Ni tarification des chèques, ni rémunération des dépôts à vue”, DAZ Séminar.

many articles (1997)²⁴⁴. Nevertheless, an overall consensus seemed to be fixed until 1987.

At this date, French banks attempted to change the rules and to bill the checks. After they made a common announcement of the billing of the checks to their clients, they had to suffer from multiple pressures from the government and the consumer associations. A review of the French press at this period revealed that they were forced to change their decisions for many reasons. Their common decision revealed an illicit agreement which was condemned by the Secrétaire d'Etat à la consommation et à la concurrence (1987)²⁴⁵. Moreover, the bankers refused to pay the positive current account in exchange of this decision. Because consumer's sensitivity on this point, the Minister of Economy asked the bankers to withdraw their decision. The final result was that the initial project was abandoned for a long period with durable negative consequences for the banks (1989)²⁴⁶.

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This failure has been particularly difficult for the Credit Mutuel network. As the pressure of both consumer and politics increased, the federation of Brittany (le Crédit Mutuel de Bretagne), published communiqué asserting that this measure was unfair for consumer. This act broke the relative consensus of the banks. As a result, a long time after those events, external and internal consequences may be observed. Externally, bankers no longer tried to co-ordinate their efforts on such a campaign, considering that a common point of view was impossible to achieve. Internally, dissension appeared with, as a long-term result, an emphasis given on the co-ordination between federations. This influenced strongly the nature of the organisation implemented for the "Service Prix" project as described later.

The arrival of the Euro currency will oblige French banks to transform the "Neither-Nor" system. First, the European Banks are used to paying their clients for the positive balance of their account. It has been the case for a long period in Germany, Spain and Italy where the rate varies between 1% to 5%. It is the case since 1987-89 for United Kingdom with the launching of this system by the Lloyd's Bank. Thus, in the context of a free-trade within European countries, it will be possible for European banks to offer the French consumer the possibility

²⁴⁴ 60 Millions de Consommateurs, (1997), Le Guide des Banques, n° 50, Oct-Nov 97

²⁴⁵ Izraelewicz, E, (1987), Le secrétaire d'état à la concurrence et à la consommation s'inquiète des modalités de tarification des chèques", Le Monde, pp35.

²⁴⁶ Fabra, P., (1989), "Faut-il rémunérer les comptes de chèques", Le Monde, pp 20.

of being paid for their positive account (1996) ²⁴⁷ in order to attract the most worthwhile among them.

Second, the principle of payment for an account in the Euro Currency is well established. This means that the current system is expected to disappear in 2002, when the Euro will replace the Franc. This represents a major challenge for the French bankers. On the one hand, the previous failure of 1987 invalidated the possibility to bill the use of checks extensively without giving a significant counterpart. On the other hand the payment of positive balance account would mean paying interests for a total amount of 1.714 billions Francs. This major challenge obliges all the banks to develop projects of new tariffs built on different bases. Though it is difficult to give an accurate date, 1997 could be identified as the beginning of those first developments. Many collective surveys were published during this period. For the Crédit Mutuel, the year 1997 represented the launching of the project “Service Prix”.

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The purpose of this project was to transform the relation with the client. The initial idea was to replace detailed and complicated billing by a pre-defined package, adapted to the customer needs and consumption. In the exchange for a set of various services including checks, the client should have to pay a fixed amount monthly. This means a major change for both bankers and clients. First the content of those packages must be clearly defined: which kind of products should be included to be attractive and useful, how many packages should be proposed in order to satisfy the different categories of clients, which kind of process should be adopted to convince the greater number of the clients. To those questions, it was necessary to anticipate client reactions which invalidated the previous project of 1987. As example, a survey realised by the SOFRES institute (1997) ²⁴⁸ revealed that only 5% of customers were keen on changing the current billing principles. As for CORA, this project involved a major change, raising strategic questions, and inducing important risks on profitability and client satisfaction.

Such project and organisations offered a very interesting opportunity to collect a rich and diverse body of information. However, given the size and the extent of each project, we had to pay attention to the limits of our research. This is what will be developed in the next chapters.

²⁴⁷ Fay, S., (1996), “L’euro va forcer les banques à rémunérer les comptes courants”, Le Monde, pp10.

3.3.5. Unit of Analysis for the Case Studies

R. Yin (1994) identified the definition of the « Unit of Analysis » as one of the crucial choice for case study research. By « Unit of Analysis », the author emphasised that the scope of the research may have a major impact on the collection of data and events. A too vague definition of the unit of analysis will lead to collect raw material on everything and thus will lead to the dilution of the means. On the other hand, as each case is supposed to describe a unique situation, Stake (1998)²⁴⁹ suggested that many topic should be included as the nature of the case, its historical background, the physical settings, the other legal, economic, political contexts. R. Yin (1994) suggested that the unit of analysis must be related to the initial research question. Due to those observations, we made the following choices.

The first limits of our analysis where linked to the major theme of our research: the service innovation project. We tried to select information according to their relation to the two projects. As regarding the bank for instance, we integrated information related to the previous unfortunate experience of the year 1987 because this failure had some impact on the way people lead the project. We focus mainly from the beginning of the project to its end, those temporal limits being one of the limits of our unit of analysis. Therefore, the two case studies integrated the first declarative informal intuitions about the project and stopped some time after its end (one year and Half for Cora, the launching for the Credit Mutuel). Those two processes will provide the basis of a comparative analysis as developed in the results.

The second element, which defined the « Unit of Analysis » was made of all the elements which has been modified by the project. For example we decided to produce further investigations when we stated that the computer department had had to renew significant parts of the programs. Similarly, we investigated the way the stores produced the new implementation of the « Universe » when we understood that the store managers were free to adapt the initial project according to their own criteria. Each time a significant modification

²⁴⁸ SOFRES, (1997), "Perception de la tarification par la clientèle particulière", Mai

²⁴⁹ STAKE, R.E., (1998), « Case Studies », in the Denzin, N.K. and Lincoln, Y.S., *Strategies of Qualitative Inquiries*, London, Sage Eds, pp 86-109.

occurred, however it was related to people, store, computers, or other infrastructures, we tried to integrate it in the case study.

The third definition of our «Unit of Analysis» was linked to the question of the Organisational Learning. We tried throughout our inquiries to integrate information related to learning strategies of the individuals but also to the setting of collective rules or procedures. For example we tried to understand the way the actors produced shared rules about a new process when the existing one had been transformed. We tried to analyse the kind of events and information taken in account in order to take the decisions linked with innovation. To do so, we split the development processes into many sub-cases which are related to learning sequences. Each time a sequence of learning, either individual or organisational, seemed to be recognised, we created a small case in order to analyse this occurrence. The analysis of what triggered the learning, of its nature and main stages provided the basis to test our hypothesis.

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The building of those different cases required the access to a lot of information. As it is underlined by Yin (1994), the collection of data may strongly influence the conclusions of case studies. Thus, we created a design that provided multiple access to data. This is the longitudinal survey we intend to describe now.

3.3.6. Purpose of the Longitudinal Survey

The purpose of the longitudinal inquiry was to identify the main stages in the development process. Probably linked to the length of the necessary fieldwork, very little research in service innovation aimed at the presentation of the main events related to innovation. As a result of the understanding of what may lead to the success or the failure remained in the state of expectations. Similarly, the question of what really changed during the process was not extensively covered by the research. The resulting picture of service innovation was blurred and somewhat confusing.

Though they suffer from many weaknesses as underlined by Cohen and Manion (1994)²⁵⁰, the

²⁵⁰ COHEN, L., MANION, L., (1994), *Research Methods in Education*, London, Routledge.

use of longitudinal inquiry was adopted due to many statements. First the longitudinal approach seems to be necessary in order to identify the main events of the innovative process while they happen. This research strategy will provide the sole way to avoid the “ex-post rationalisation” phenomena. This methodology provides insights on the decision, before, while and after the events. Thus, it becomes possible to cross what people assert during the different stages of one decision. By doing so, the observations may fill the gaps between what is said and the actual events.

Longitudinal inquiry could also integrate non-planned changes, which frequently occur during innovative processes. This means that this methodological choice will provide statements on the nature and reasons of the erratic course of innovation. This phenomenon has been well recognised in the Van de Ven and Yu Ting Cheng research (1996)²⁵¹. Working on two biomedical innovations, they observed that during the first stages of the process, the actions and outcomes experienced by the development teams exhibit random or chaotic patterns. Because this statement invalidated the predictability of the process, it also invalidates the methodologies based on single interviews or questionnaires administrated on a single moment.

The third reason of this methodological choice is that a research on learning entails having a causal perspective on behaviour. The learning causal sequence may be described as follow: If something is learned at one moment of the process, the behaviours will be modified on another point of the process. This temporal sequence necessitates observing behaviours of the same individual and organisation over a scale of time. As underlined by Cohen and Manion (1994), longitudinal studies are: “particularly appropriate when investigators attempt to establish a causal relationship, for this task involves identifying changes in certain characteristics that result in changes in others.....(They are) specially useful in sociological research because it can show how changing properties of individual go together in changing properties of social system as a whole” (p69). The same may be said for innovation processes where the choice on one point of the development is due to influence the following episode.

Due to their temporal aspects, the longitudinal inquiries consist of describing the context of

²⁵¹ VAN DE VEN, A.H., YU TING CHENG, (1996), “Learning the innovation Journey: Order out of the

the firms, and their previous experience accurately. Thus we intend to provide the reason of the choice of firms we selected, the nature and the interest of the innovation project we decided to focus on. The longitudinal survey has been summarised as follows. This design provided an access to all the information linked with the innovative projects. Its counterpart has been the time spent on the collection and treatment of the data which came from so many different ways.

3.3.7. Methodology for the Longitudinal Survey

The design of the longitudinal survey includes the sampling choices, the collection of data through interviews, the creation of a research committee, the use of participant observation and the triangulation strategies we used in order to reinforce the validity of the data.

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A- The sampling choices

All along the development process, we collected data by interviewing the staff members involved in the project. The selection of the respondents has been done according to their participation to the project. Each time one person was mentioned as a direct contributor to the process or to the decisions, we interviewed him/her. This method seemed to produce very good results. At least, we had on the major decisions the point of views of most of the contributors. This provided unique insights in order to measure divergence or convergence of the point of views on the same question. We did not have uncommunicative interviewees, as the innovation topic appeared to be of first interest to all the people we met ²⁵². Those interviews also provided the basis of the case studies that will be developed in the next chapter.

Each time we interviewed a person for the first time, we asked questions about their background and functions. The purpose was to understand roughly what could be the main

Chaos”, Organisation Science, Vol 7, n°6, Nov-Dec, pp 593-614

²⁵² During the interviews, we didn't recognise any topic which created such an interest. This main interest in Innovation constitute a result in itself, as we will comment latter in the statements. Due to this enthusiasm, we had to remain cautious about the quality of data delivered.

fields of competencies. This approach was not very precise. However, given the uncertainty of the contributions, it was necessary to work with such a broad frame.

The limit we adopted was to restrict interviews to staff members. We interviewed neither suppliers nor consultants. This choice has been done initially in order to restrain the number of interviews. But at the end of the process, we noticed that the external contributions to the projects remained non significant or non existent.

According to Cohen and Manion (1994), a pure longitudinal survey would have been made up of repeated interviews of the same sample of respondents. This purpose has been partially achieved for the Credit Mutuel, because it was possible, due to the organisation of the project, to focus on the leader of the development team. We had more than 10 interviews with her throughout the development duration, either in an interview situation or during formal presentations. This was the sole case of repeated interviews. Nevertheless, due to the re-engineering of the company that occurred during the process, the principle of repeated interviews of the same people was impossible to fully achieve. This could appear as a methodological weakness. But, as we will see in the presentation of the results, this situation of fluctuating actors, blurred purposes and random events is a natural process faced by the person in charge. Therefore, we had to adapt our methodology to this changing environment in order to integrate the reality of the phenomenon we investigated.

We encountered the same kind of problems as CORA, because of the less formalised process. In this second case, a different project manager led each part of the process during the initial stage. Each store manager and his staff achieved the implementation stage. Thus, we made cross sectional interviews of different people, at different moments of the process. People were selected according to the task they had to produce during the development process. This means we interviewed all the actors involved in the first part of the project. For the implementation in the stores, we interviewed four store managers and their staff individually. This represents more than 15 interviews for this part.

The main weakness of this kind of sampling may be the bias due to sampling omissions. Due to the complexity of the process, important contributors may easily be forgotten. In order to avoid such bias, two methodologies were used. First, during the interviews, we investigated

on the people who worked with the respondent on the project. Thus we drew up a sociogram for the two organisations which made the interaction between people tangible. By doing this we were in position to compare our sample of respondents with the interaction network as described by the actors.

B. Design of the interviews, Analysis and Interpretations.

We used mainly the techniques of semi-directive interviews to collect the data. According to methodologies well described by Nigel (1994), we created an interview guide listing the topics we intended to review. As we adopted longitudinal methodologies, this guide changed for each interview in order to include questions related to the confirmation or the explanations of the last stages of the development. The purpose at the beginning of the inquiry was threefold:

- Identify what the managers in charge of the development considered as being the main stages of the development.
- Identify how the changes was achieved and specifically identify decisions that was based on learning processes.
- In case of learning actions, how was it achieved.
- Compare the development processes in order to cross the findings from two different companies.

Those four broad questions remained constant all along the investigations. Only questions related to each decision changed due to the progress in the development.

We refrained from asking direct questions on learning. As our intent was to define wether the respondents used learning strategies to solve problems, it was possible to access the answer through their explanations on how they act and think during the decision making process. Moreover, as the intent of the participant was not to learn but to take a decision, we made the choice not to communicate directly on this theme, even if it was central in the analysis of the responses. Having an open learning orientation would have resulted in the expression of what the individual thought learning was and not necessarily on the way they used learning

strategies in their own decision making. This may appear paradoxical not to speak of learning in a research on learning. However, as most of the people have opinions on what is learning, we decided not to ask questions related to that topic. Rather, it seemed more relevant to investigate on the development actions and decisions, and to decide afterwards what was learning, when it occurred and what for.

Our major concern was to collect information on the situations of development as the respondent perceived them and not according to the point of view of the researcher or of their hierarchy. To do so, we used systematically open questions to interview the respondents. For instance, the interviews began with questions like “could you describe what happens over the last weeks...”, and then we moved to questions like “How did you interpret this decision...”, “How did you react to the situation...”. Each time, we tried to understand why, from the respondent perspective, it was logical to interpret in a given sense or to behave in a certain way. To these initial questions, we tried to investigate the intentions of respondents for the next stages: “What do you intend to do now...”, “What do you think could be expected now...”. The guiding principle during those interview was to understand the way respondents perceive the projects, the main events related to it, the kind of links they established between actions and the perceived role of the different actors.

This approach was very successful in understanding the importance of uncertainty all along the development. For instance, one respondent said:

“The situation was confusing because, after having discussed on what could be the offer, any of the staff member was in charge of the transformation of the discussions into formal procedures and rules. At this moment I said to myself that I will undertake the writing of those rules. Then, while writing, I asked myself a lot of questions that resulted into the modifications of parts of what was said previously. I submitted those modifications to the commercial board and after that I had again reached an impasse. Then I choose not to meet the commercial board but directly the general manager in order to have a validation of the proposals.”.

This testimony explained that part of the development stages were clearly improvised, even though most of the managers would say the contrary. Furthermore, it is easy to demonstrate

from this simple sentence that strictly planned development process will lead to failure each time unexpected decision or situation are encountered. Part of the success relies on the capacity of the staff to undertake those unexpected events according to their own competencies.

Moreover, by having more information about the detailed function of the respondent, in this case the person was in charge of writing the procedures for all products, it is possible to conclude that what this person did in front of uncertain situation was to apply what she learned from previous situation. This provided a first clue on the interest of managing competencies while innovating. Having an approach focused on the perception of the respondents themselves produced more insights and understandings of what was going on in the development process.

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Eventually, this part of the interview demonstrated that the design of the offer benefited a lot from successive refinements, obtained through a cycle of: “idea generation-formalisation-testing-improvement”. This cycle, that can be interpreted as one kind of organisational learning loop, appeared to be repeated by multiple actors for many decisions in the two companies. Thus it was possible to assert that this organisational learning strategy contributed significantly to the design of the new offers.

Each of the interviews was analysed according to the recommendations of Miles and Huberman (1994), Denzin and Lincoln (1998) and Yin (1994). First the data was gathered in order to describe how the new offers changed and then how the development process was organised, from the beginning to the end. On this longitudinal description, the main events that has been mentioned by the participant has been put together. This provided the content for each of the two projects and the possibility to compare the main stages of each with the other. This description is provided in the annexes 5 A and 5 B. Many triangulations have been provided by sources other than interviews (written documents, report of the meetings, promotional leaflets, etc...), so that this chronology may have solid foundations. On this basis it was possible to demonstrate that any common development pattern could be identified, except the use of “guiding principles” and of “learning strategies”. This was developed in the chapter 1.3.: Comparing the two innovations.

The data was analysed in order to identify the learning stages, learning strategies and learning actions. This was achieved by the use of coding grids. By focusing on the way people took decisions related to the design of offers, it was possible to define the kind of learning actions implemented in order to solve problems or to take decisions. The comparisons of the interviews and the cross comparisons of the two cases provided interesting generalisation on the sensemaking process, on the actions of learning and eventually on the links between organisational learning and the development process.

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Figure n°24: Design of the Interviews.

	Crédit Mutuel	CORA
<u><i>Purpose of the inquiry</i></u>	<ul style="list-style-type: none"> -Identify the main stages of the development process and the nature of the change within the organisation. -Identify how this change was achieved. -Compare the two processes in order to identify common patterns of development. 	<ul style="list-style-type: none"> -Identify the main stages of the development process and the nature of the change within the organisation. -Identify how this change was achieved. -Compare the two processes in order to identify common patterns of development.
<u><i>Sampling</i></u>	<ul style="list-style-type: none"> -Multiple Interviews (8) of the executive in charge of the project throughout the development. -Interviews of the executives involved in the project: Chief executives (many times), Federation Co-ordinator, Sales Manager, Organisation Manager (2), Head of the software development, head of the administrative department, head of the marketing department. 	<ul style="list-style-type: none"> -Interviews of executives in charge of the development project at all levels of the organisation: Level of General Management: <ul style="list-style-type: none"> -2 Chief executives, 1 Head of Purchasing Department, 1 head of Communication Dpt, 3 Purchase Managers. Level of the stores: <ul style="list-style-type: none"> -5 Store Managers, 4 Department Co-ordinators, 5 Department Managers. A Questionnaire was administrated to the stores. Store managers, Department co-ordinator and department managers had to fill the questionnaire.
<u><i>Interviews Techniques</i></u>	<ul style="list-style-type: none"> -Semi directive interviews -Most of them lasted around one hour to one hour and half -Interviews structured systematically around the three themes investigated. -Use of open questions in order to collect the point of view of the respondent on each part. 	<ul style="list-style-type: none"> -Semi directive interviews -Most of them lasted around one hour to one hour and half -Interviews structured systematically around the three themes investigated. -Use of open questions in order to collect the point of view of the respondent on each part.
<u><i>Data Collection</i></u>	<ul style="list-style-type: none"> -Semi-directive interviews recorded on tapes and transcribed on paper. -Notes taken during the different meetings with the executives -Transcription of thoughts and observations on a research diary. 	<ul style="list-style-type: none"> -Semi-directive interviews recorded on tapes and transcribed on paper. -Notes taken during the different meetings with the executives -Transcription of thoughts and observations in a research diary.
<u><i>Data Interpretation</i></u>	<ul style="list-style-type: none"> -Transcription and text analysis -Coding of the main events (see the list of codes in the annexes). -Comparisons between the two processes -Signification of observed events to the different actors. 	<ul style="list-style-type: none"> -Transcription and text analysis -Coding of the main events (see the list of codes in the annexes). -Comparisons between the two processes -Signification of observed events to the different actors.

C. Creation of a Research Committee

For the interviews and texts analysis, we created a « research committee » for each company, which included the chief executive, the project managers and some of the people involved in the development process. We described those groups as follow in figure n°25. We produced each two months a formal presentation for this « research committee» in order to validate some results and to check that we had not forgotten any important actors in our interviews. Those committees also had the function of gatekeepers. They facilitated the access to executives who may have otherwise refused to be interviewed. Though the functions of those actors changed all along the project, those groups remained fixed from the beginning to the end of the field investigation. This Research Committee also had the mission to reinforce the internal validity, as we will develop further.

Figure n°25: The Research Committee for Each Company

Crédit Mutuel	Cora
Chief Executive.	-Chief Executive and owner of the company.
Head of the Back Office Department.	-Chief Executives in Second, In charge of the management of the stores network.
Marketing Manager.	-Head of the Purchase Organisation Opera.
Project Manager.	Purchase Manager for Leisure and Culture Products.

D. Participant Observation

Participant observation suffers from many weaknesses as underlined by Cohen and Manion (1994). This discredit is due to the subjective accounts that are due to emerge from direct observation. Subjective, biased, lacking in precise and quantifiable measure are the main objections which qualify issues of participant observation which is often described as opposed to the “positivist” or “scientific” perspectives as said by Atkinson and Hammersley (1998)²⁵³.

²⁵³ ATKINSON, P., HAMMERSLEY, M., (1998), “Ethnography and Participant Observation”, in N.K. Denzin and Y.S. Lincoln Eds, Strategies of Qualitative Inquiry, London, Sage.

Nevertheless, we have chosen to add this methodology to our data collection for many reasons.

The major one is that direct observation was another way to triangulate our source of data. By attending the meetings of a “working group” focused on the development of new services, it was possible to compare declarations of respondents during the interviews with the actual practises they developed. This was particularly important during the first stages of the creation process, when the level of uncertainty is very high. In those situations, nothing appears to be very clear, as we will see in the results. Thus, the temptation is very strong to built an ex-post-rational declaration during the interview. Due to the natural tendency to appear rational, the respondent tends to report from past situations according to their current experience. These trends should result in the vanishing of the random aspects of the decisions. Similarly, it was interesting to observe innovation in a situation in order to verify that the interviews did not forget any important features or characteristics of the process.

The other reason was that the participation at those meetings provided genuine opportunities to meet people within the organisation. As every meeting took place in a different store, we could extend our accounts about the transformation of the stores. Moreover, we met many store managers who were invited during each meeting. Through this means we refined our knowledge of the context in which managers tried to innovate and to understand the ongoing logic of all the actors of the organisation.

The last reason is that it is recognised by Denzin (1970) that the participant observation may provide another way to determine whether or not the hypothesis fit with the observed facts. For example, the participant observation makes building expectations possible based on the hypothesis at one point of the ongoing process and to test them by observing the way predictions are confirmed or not. This could not constitute a validation in itself but may contribute to reinforce the validity of the collected material.

We had the opportunity to participate in the creation of a working group by Cora. The initial intent was to nurture and favour the development of new services within the hypermarket divisions. An initial working group had been created in June 1998 and was in charge of the identification of the existing idea within the stores, of the creation, of the testing and in the

diffusion of all the “best practises”. This group was made up of two Store Managers and fifteen participants from the stores (different department managers, purchase managers, account manager, warehouse manager). None of the participants had a very clear idea of what was expected by the general management and most of the participant had no idea of the precise definition of the word “innovation”. Was it expected to develop a new form of stores, to transform some of them, to innovate on Cora Own Products. This beginning constituted a good way to observe the way people faced uncertain purposes produced innovations.

We attended 10 of the 14 meetings, which took place over one year and a half. For all those “events”, we took notes during the meetings and re-wrote them shortly afterwards, following the advice of Cohen and Manion (1994). Those reports were written in a research diary, which centralised all the observations taken during those meetings or during the interviews. We collected all the reports that were made by the assistant of the group. The expression “participant_observation” induces some uncertainties about the proportion of observation and participation given by the researcher in the group. We tried to stay in the position of observant. Our strategy was to participate in the discussions of the group, but without actually working on the practical issues.

E. Triangulation Strategies

Broadly speaking, the triangulation strategies aim at providing reinsurance about the reliability of the data provided in the research. This methodology has been applied under the protocols suggested by R. E. Stake (1995)²⁵⁴. However, due to the specific focus on the sharing of ideas in the case of organisational learning, a second strategy of triangulation has been adopted aiming at finding specific kind of events.

Firstly, we tried to establish triangulation in order to provide reliable data linked to dates, actions and decisions. Our main concern was to reduce the effect of erroneous declarations. To do so the protocols suggested by R. E. Stake (1995) were used. According to this author, the main triangulation strategies are the data source triangulation, the investigator

²⁵⁴STAKE, R.E., (1995), *The art of Case Study Research*, London, Sage Eds.

triangulation and the methodological triangulation. First, we tried to triangulate data sources. In order to create our sample of respondents, we opted to interview people who were mentioned by other staff members during previous interviews. This provided a good basis to cross the information and to ask for further details when it was necessary. Secondly we tried to enlarge our source of data. We added the analysis of the written documents to the interviews, related to the process of innovation. This included meeting reports, general market surveys, advertisements edited in order to promote the innovation. We also reviewed press articles focused on the topic for the retailers or for the banking industry.

Investigator triangulation was partially achieved as it was difficult to work as a team on a thesis. Nevertheless, we adopted many procedures that reinforced our triangulation strategy. First we asked the respondents to review the written transcriptions of the interviews in order to validate or correct the information delivered. Second, as said before, we reviewed the main statements with the Research Committee, in order to validate them. This consisted of short reports delivered before the meeting and focused on the results, but also in formal presentation, based on transparencies. Third we tried to communicate our results, to the academic community. We wrote three articles (one has been published and the other are submitted to research reviews) and we made two formal presentations of our work to the researcher of our school and to a visiting professor.

We provided a methodological triangulation by adopting different methodologies to produce our inquiry. We adopted the qualitative interviews and the tools for the content analysis recommended by Miles and Huberman (1994)²⁵⁵. But we tried to add other methodologies. To this end, we administrated a written questionnaire to the 60 CORA hypermarkets. Though we had previously interviewed the staff of four of the stores, our purpose was to have a full picture of the change at this level of the organisation. This questionnaire aimed at having a precise schedule of the date when the innovations had been proposed to customers, and to understand the nature of the means used to achieve the results.

To this initial concern, we added a second triangulation strategy, which was related to the topic itself. The organisational learning model put emphasis on the cognitive conflicts as one

²⁵⁵HUBERMAN, A.M., MILES, M.B., (1994), *Qualitative Data Analysis*, London, SAGE Eds, Second Edition.

source of the learning. They also focus on the interaction process between individuals and groups. **This means that the divergence in the interpretation of the same situation is an event in itself for our research** and not necessarily a disagreement on an objective fact. From this point, it was interesting to analyse whether or not the actors modified their own perceptions and by which process. It would be possible to verify that the cognitive conflicts led to further learning as hypothesised by the O.L. models. Therefore, investigating the two sides of the perception was not only done in the perspective of establishing the truth. It was also done to establish the existence of divergence and the way the actors found solution to this.

This specific approach of the triangulation led us to focus on such kinds of events. To do so, we tried to cross the part of the interviews that report the individual interpretations of the information. This exercise sometimes appeared disturbing as the individual's analysis may have differed or diverged, even though objective data was available. However, we also noticed that in some case, convergence occurred partially on some part of the individual assumptions about the world. Thus it was possible on many decisions to observe how interpretations converged or diverged, according to personal position and interests. **Triangulating in this case does not mean to find the right answer but to notice why the interpretation may differ and what was the consequence of this divergence or convergence.**

In order to triangulate this statement in a more traditional way, we identified three mini cases around these kind of events. Those mini cases were diverse in terms of situation (beginning and middle of the development process), in terms of actors involved (middle-general managers, operational versus functional positions, deeply involved in the development versus marginally impacted, etc...), and in terms of the content of the interpretation (environment of the hypermarkets, environment of the banks, building the new departments in the stores, invoicing process of the bank customers, creation of a working group on innovation in the retail company). Each time, we crossed information related to the case (a decision, an assertion about the environment) by rereading the multiple interviews we did all along the development process. Thus we analysed the interpretation in order to cross the convergence and the divergence. Having done this, we observed the decisions related. Three cases has been developed in the results: The billing process in the bank company, the creation of a new

development group in the retail company and the initial stage of the bank project. Those case studies were used in order to write the chapter 2.1 New Service Development as a Sensemaking Process. In those different cases, the members involved in the sub-part of the projects had divergent interpretations of the way things must be designed.

3.4. SUMMARY ON WHAT HAS BEEN OBSERVED

As described during this section, the observation of organisations during the development of new offers entails gathering data at different levels. The following figure n° 26 describes the kind of events that were observed and the means used to collect the data. As said previously, the investigations were firstly focused on what changed along the process and, secondly, how this change was achieved. As it was impossible to observe the entire organisation in detail for a long period, the scope of investigation was reduced by three broad choices.

First, the focus was put on the organisation itself and not on the inter-organisation aspects of the development. This choice resulted from the statement that any other organisation directly impacted on the two developments. As any serious opportunity has been offered to observe such an event, the focus was put deliberately on the intra-organisational aspect of the development. This constitutes a limit in the findings as it may be hypothesised that the participation of other organisations in the development could modify the learning process.

Figure n°26: Summary on what has been observed

What has been observed	Kind of Event, Data, Information	Source of Information
Development Process	<ul style="list-style-type: none"> -Main Stages defined by the participants. -Main tasks and outputs produced by the staff. -Duration of the main stages. 	<ul style="list-style-type: none"> -Interviews of the participants -Docs related to the development process (market assessments, reports from consultants, etc...) -Reports from internal meetings. -Advertisements and promotional leaflets.
Offers — —	-Offers resulting from the development process	<ul style="list-style-type: none"> -Front Office Offers, Map of the Stores, Direct Observations in the stores. -Procedure Charts for the bank. -Procedures and Routines supporting the production of the offers.
Organisational Features	<ul style="list-style-type: none"> -Organisational Charts -Job definitions 	<ul style="list-style-type: none"> -Internal Documents -Interviews -Reports from internal meetings
Decision Process	<ul style="list-style-type: none"> -Decision process related to the development. -Interpretation process of the information linked to the development. -Conversation process within the development groups 	<ul style="list-style-type: none"> -Reports from the Commercial Committee -Interviews, Triangulation of the Interviews, -Participant Observation
Environment of the companies	-Change in competitor's offers	-Mainly through literature, promotional leaflets and direct observation of the store (nothing linked to the development process itself).

Second, the way the consumer perceived and adopted the innovation was not directly investigated. Due to the adoption of the Organisational Learning approach, the investigations focused on how the organisation built, interpreted and analysed the consumer expectations rather than on the way the consumer built his own expectations of the offers. As a consequence of this choice, the question of the validity of the interpretations by the staff is not discussed. Only the way the interpretation process is developed. This corresponds to our

purpose, which was to build a first theoretical framework for new service development.

Third, the scope of the observations was reduced by focusing on development only. This means that the organisational features that were not directly impacted by the development were excluded from the survey. Similarly, the actors that provided minor or no contribution has not been directly interviewed. This resulted directly from the sampling choices described previously. The benefit expected from this choice was to limit the capacity to control the quality of the information (see triangulation methods). The limit of this choice is that, if some potential contributor/department had been excluded deliberately, for political reasons or for his/her own choice, then our observations, specifically for the interpretation and learning process, could have been biased partially by not covering the benefits or disadvantages resulting from those choices.

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3.5. CONCLUSIONS ON THE VALIDITY AND LIMITS OF THE METHODOLOGY

In itself, the sole observation of the empirical facts, as exhaustive and objective as it may be, could not be considered as a scientific reasoning. Similarly, the sole logical construct of pure theoretical models, logically deduced from the previous scientific constructs, could not be considered as more scientific than the first assertion. To those two statements K R. Popper (1959)²⁵⁶ added a third allegation. The use of an inductive method does not form in itself the principle of scientific discovery. Those three declarations emphasise that the building of a corpus of universal statements must be carefully built.

Do the research questions we developed in the introduction of this chapter lead to the building of a scientific assertion? Do the methodological choices we have chosen provide a sustainable position made of clear and reliable results? The answer must review the interest and limits linked to the choice of the projects themselves as the overall criteria of research validity. We intend to conclude on the strengths and limits of our research with the argument of Popper (1959) who argues that only refutable proposition should be considered as scientific assumptions.

3.5.1. Interests and limits of a comparative approach of two cases of new service development.

For the characteristics described above, the two projects present many common interests for our research. They correspond to our previous definition of innovation, their nature and scope make comparisons relevant, organisational features are similar, in both cases those two projects are ongoing processes and finally, the choice of two projects improves the generalisability of the findings.

First, they corresponded to the definition of innovation we gave previously. Both of them aimed at the transformation of the interaction processes between the customer and the organisation. In the case of Cora, the change of the interaction meant the removal of shelves

and the change in the disposal of products will led to a transformation of the buying process. In the case of Crédit Mutuel, the setting of a new contract implies negotiating it with all the customers. A principle of monthly billing is in itself a change in the interaction process. Moreover, when approved, this contract put constraints on the consumer behaviours for example by restraining the use of checks. Thus it is possible in the two cases to analyse and compare the ways those organisations transform their interaction processes.

Second, the two innovative projects are of similar importance. In both cases, the transformation of the interaction process necessitated heavy investments. The re-implementation of two-thirds of a store for 60 hypermarkets meant transforming at least 300.000 m² of sales area. The transformation of the contracts already established entailed negotiating them with more than 250.000 customers for the federation of Anjou. In both cases, the scope of change meant making major investments in terms of time, money and teams.

Third, because of those major changes, there may have been similar involvement in terms of organisational change. Due to their importance, those projects involved the participation of all the levels of the companies. The general management was concerned with the strategic aspect of the project and also by the organisational consequences of the change. Similarly, the operational local level had to implement the decision taken in other places. Therefore, the problems of co-ordination between different levels may be observed in a very similar way and their comparisons may be relevant.

Fourth, the two processes began before our fieldwork. But in the two cases it was possible to observe them during their progress and until their achievement. Therefore the comparison of the decision process under uncertainty, which characterises the innovation journey, was possible and comparable, either during the process or after the decisions. This makes confrontations between the arguments possible used during the progress and the final decisions and outcomes.

Finally, the choices of those two cases also provides interesting comparisons on the learning

²⁵⁶ POPPER, K.R., (1959), *The Logic of Scientific Discovery*, Payot Eds for the French Edition, 1973.

processes used in two different cases. K Eisenhardt (1989)²⁵⁷ named this strategy the search for cross pattern. The author suggested that the “tactic is to select categories or dimensions, and then to look for within-group similarities coupled with inter-group differences”. The variations resulting from different contexts should provide the possibility to identify patterns and similarities within the two contexts. Moreover, the comparisons of learning models whatever the context might reinforce the external validity of our findings.

Three main limits resulted from methodological choices. Due to our late arrival on the projects, we missed their beginning. We think today, and this is one of the results we will develop later, that it remains difficult or impossible to observe the birth of an innovation project for the reason that during this first stage, things are so informal that no one is speaking about a project. The official birth, the recognition that a project is necessary, does not constitute the first stage of the process. It seems to be the last stage of some kind of condensation or crystallisation process. In other words, it is difficult before the official recognition of a project to know that at this place, at this moment and for those actors, a project will arise. Thus, one limit of the choice of the two projects is that the observation and understanding of their beginning remains indirect.

The second limit resulting from our selection is the nature of the project in itself. Our investigation focused on major projects. During the interviews, we had the occasion to understand that numerous other projects were in progress. Although none of them was as important as ours. This may constitute a bias depending on the research perspective we adopted. In the search to qualify and understand the development process, the strategic nature of the project is due to have an influence on the process itself. The number of stages, their nature and the actors involved in them may be largely dependent on the strategic considerations. On the other hand, the organisational learning features may be very similar whatever the kind of process considered.

The third limit is linked to the project's entanglement. Our choices of major projects increase the complexity of our investigations. Given the intricacy of events, actors and structures, the simple identification of who was involved, at what time, for which task was a purpose in

²⁵⁷ EISENHARDT, K.M., (1989), “Building Theories from Case Study Research”, Academy of Management

itself. Moreover such complex structures, which implies a great division of work, results in diverging opinions on the same project. According to their position in the organisation, the people in charge of the project in the different departments gave different meanings to similar events, selected information according to their concerns and position, built individual opinions based on their own experience. This complexity involved a circumspect analysis of data. The understanding of the course of the project relied on the analysis at each level of the organisation.

To the interests and limits linked to the choice of comparative case studies, one must discuss the overall validity of the research. This constitutes the “reliability” and the “construct validity” of our methodology. Then we will shortly review the criteria of internal and external validity in order to explain their use during the exposure of the findings.

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3.5.2. The “reliability” criteria.

The purpose of the research of reliability is to ensure that a later researcher, using the same methodology to conduct a similar case study should arrive at the same findings and conclusions. This criterion is necessary in order to avoid errors and biases due to the undue interpretations of the investigators. According to Yin (1994), this general purpose may be achieved if the accountability of methodologies and of the findings provide another investigator with the means of reproducing the “experience” or the study in our case: “the general way of approaching the reliability problem is to make all steps as operational as possible and to conduct research as if someone were always looking over your shoulder”. The increase of the accountability of our research was achieved by the formalisation of our methodology and by the production of a repertory grid resulting from the coding of the interviews.

Each interview was coded according to the guidelines given by Corbin and Strauss (1998)²⁵⁸ and also by Miles and Huberman (1994). As a result, a repertory was created by summarising

the codes coming from all the interviews. We had also provided a definition of each of them in order to facilitate the retrieval of the code fitting with a given segment. By doing so, it is possible for a later researcher to verify that our conceptual building is based on the coding of interviews and not on abusive interpretations of the texts.

Those two procedures made the reproducibility of the methods we used to collect and analyse the data possible. Thus we can conclude the “reliability” of our investigations. Nevertheless, these criteria do not ensure that we have covered the entire range of the available information. This third criterion is the “construct validity”.

3.5.3. The “Construct Validity” criteria

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One potential bias of the case study research lies in the insufficient operationalisation of the concepts. Such a weak definition results in a poor operational set of measures which could lead to blurred results, invalidated by subjective judgements. This is particularly important for topics, as for innovation because the nature of the change, and its measure, may be difficult to isolate from a complex chain of events occurring within the firms. According to Yin (1994) this requirement of “construct validity” is achieved by the use of many tactics.

First, the operationalisation may be achieved by a careful examination of the nature of the change linked to the innovation. We devoted our first chapter to define this point. Thus the nature of the change we intended to review has been clearly defined. Moreover, the adoption of formalised means such as the blueprinting models provided good ways to analyse the changes in the processes. This definition provided the guidelines for the selection of the interviewees during the fieldwork. On this point, it was possible to collect the data linked to the nature of change we previously defined. Similarly, the second chapter, which focused on the organisational learning, provided both the definition of the concept of learning and its operational measures.

Second, the author asserts that the use of multiple sources of evidence will reinforce the strengths of the inquiry. Following those recommendations, we used multiple sources of evidence throughout the field analysis. To the interviews we added written documents, such as

the internal reports, market surveys, the promotional supports and also the articles written in newspapers. Moreover, it was possible to visit the stores and to collect maps of the new implementations in order to compare the nature of the change in many stores.

Third, the authors underlined the interest of having a draft of the case study reports being reviewed by the key respondents of the firm. As we negotiated the creation of a research committee at the beginning of our research, it was possible to develop the nature of our statements and their conceptual and managerial involvement every two months. This provided the opportunity to correct some points or to nurture the missing information.

According to this criterion, the construct validity has been achieved. Nevertheless, the collection of data which responds to the concepts we used was not sufficient to conclude to the “internal validity” of our research findings. To the same extent we did not speak about the external validity which constitutes the third criteria of a valid research. We intend to conclude on our methodological chapter on these two points.

3.5.4. The “Internal” and the “External Validity” Criteria.

The “internal validity” criterion refers to the existence of causality links established between two variables. The research design must clearly avoid that an ignored or hidden “third factor” may be the actual source of the stated variance. More broadly the building of inferences is due to raise the problems of the rival explanations of the same phenomena. This fundamental criterion is not only a question of methodological choice, it is related to the results that have to be reviewed specifically in this perspective.

This point was at the core of our investigations. As we developed before, a learning process means that a decision is taken according to previous learning. This means that the investigation on causality will have to justify this causality. We selected decisions where the causality, which links the decision to the learning, may be established. We also investigated the opposite cases in order to analyse if they invalidate our theoretical frame. This requires analysing each results and challenging the findings with alternative theories and facts. To do so involves the development of the findings themselves. Thus, we analyse this criterion after

the exposure of the first findings.

Similarly, the “external validity” criterion refers to the problem of knowing whether the findings may be extended to another context. In other words the question of any research is to justify the possible extension of the findings to other contexts, situations and phenomena. Because the external validity is based on the replication logic as said by Yin (1994), we carefully chose our case studies according to the variations and the similarities they create. By choosing two different sectors, we created variation. By selecting firms integrated in large distribution networks, we have created similarities. Therefore, it should be possible to identify either common patterns, that may reveal results easier to generalise, or differences, which separate the situations.

Nevertheless, though this methodological choice offers many opportunities, the generalisation of results remains linked to the nature of the findings themselves. This means our research must analyse on presentation whether the findings on the two cases may be applied to other companies and, if the answer is positive, to review the limits of this validity. Because this replication logic is difficult to achieve without the findings themselves having in mind, we intend, to develop the internal validity after the development of the results.

3.5.5. Conclusions: on the “Falsification Criteria” as the First Principle of a Research Validity.

Although scientific reasoning would have some interest, it does not aim to build universal statements. In a common sense, scientific results give a causal and objective representation of the reality as suggested by Paty (1978)²⁵⁹. Such a project includes the description of a phenomenon, the explanation of the existing causalities and the predictions of given states, built according to the theories.

This led the researcher to adopt either a deductive logic or an inductive logic in order to

²⁵⁹ PATY, (1978), *La Matière Dérobée*, La Pensée Eds, Quoted by Wacheux, F., (1996), *Méthodes Qualitatives et Recherche en Gestion*, Economica Eds.

generalise empirical statements as highlighted by Wacheux (1996)²⁶⁰. The deductive logic refers to the positivist tradition, which asserted that it is possible to deduce hypothesis from a general theoretical corpus. This made of “the long links which links simple causes” asserted by Descartes in “ Le Discours de la Méthode” (1637), enables to account for reality. By splitting the object into as many parts as necessary, it would be possible to deduce or to predict the state of a given system. On the other hand, the inductive perspective tries to discover regularities on the examination of singular cases. An inference is qualified as being inductive if it goes from singular assumptions, such as the reports of a phenomena, to universal statements like hypothesis or theories.

Popper (1959) emphasised that neither the deductive perspective, nor the inductive logic could lead to scientific conclusions. As a result, the central assertion of the Popper’s thesis is that the sole criteria able to lead to scientific conclusions is the possibility to falsify the statements: “In other words, I can not request from a scientific system that it could be chosen definitely in a positive meaning, but I should claim that its logical form may be built through the means of empirical tests, in a negative sense: *a system being part of the empirical science must be possible to refute by the experience*” (p37). The validation of a scientific production can not be its logic or even its probability. Thus, the positive verification of hypothesis is impossible to achieve. One can only say that for a given experience the theory has been falsified. As said by Popper (1972)²⁶¹: “From the objective knowledge standpoint, all the theories remain conjectures” (p145). The famous example of the white swan may illustrate this fundamental assumption. The statement of a great number of white swans can not justify the conclusion that all the swans are white. On the contrary, a sole black swan will falsify the initial assertion.

As a consequence, one of the first criteria of validity for our research is that the hypotheses we have built are possible to falsify. This means that the occurrence of some kind of events may invalidate the model we proposed. Is this the case of our research questions? In other words is it possible to falsify the assumptions we summarised at the beginning of this chapter?

First we hypothesised that the development of a new service is achieved through an

²⁶⁰ Wacheux, F., (1996), Méthodes Qualitatives et Recherche en Gestion, Economica Eds.

²⁶¹ POPPER, K.R., (1972), Objective Knowledge, Oxford University Press, Aubier (1991) for the French Edition.

organisational learning process. Regarding the falsification criteria, the occurrence of an innovation implemented without any learning stage would invalidate the central hypothesis of our research. This occurrence is possible if, for example, a new interaction process is created and implemented with no previous experience and no change in its course after the first experiences. This may also be the case if the creation of a new service is the result of an organisational change, which transforms the interaction process by removing the people in charge of its delivery.

In our research, the examination of two in depth case studies should lead to a better analysis of the nature of the development process. We do not intend to demonstrate that all service developments are learning processes. According to the Popper (1959) demonstration, such a project remains logically impossible. But we will be in position to invalidate our thesis through these examples if in one of them the development is achieved without any occurrence of learning. In this sense we can assert that our central hypothesis is possible to falsify. Thus our research validates this first criteria of the scientific reasoning.

At this point of our research, we can conclude most of the research validity. We have seen that the methodological choices may provide a real “refutable” research question, a basis of accurate and reliable data focused on the research question, and respond perfectly to our purpose. The research design we have built provides the basis of an accountable reasoning, which may be reproduced from its beginning. In this sense, we can develop the findings on the basis of trustworthy data.

**PART FOUR: EMPIRICAL FINDINGS, VALIDATION OF THE N.S.D.
MODEL AND CONCLUSIONS.**

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The longitudinal observation of the two projects resulted in rich and in depth views on the innovation. In line with the objectives of the research, this part will focus on two major purposes. First, it will try to identify the content of service innovation in the two cases. By making an in depth analysis of the way each offer is produced before and after the change, it will be possible to compare which elements have changed and which remained in their initial state. This part is mainly described in chapter one. The second part of this part of the thesis adopts a temporal perspective. It is focused on processes of change. The central question here will be to analyse the way in which actors perform the transformation of the servuction system in order to move from one state to another. Considering the process, the presentation of the main events (information, decision, results from first experiences) reported by the actors during the building of the innovative solution will be extensively developed. To do so, sense given by the actors to events will be investigated. The divergences will be explored each time they occurred, implicitly or explicitly. This part is developed in the chapter two. Then the validation of organisational learning models and their involvements will be discussed in the chapter three. The structure of the results is summarised in the following figure n°27.

Figure n°27: Summary of the results

Main Parts	Display of the results	Chapters
What has changed during the two development processes (Part Four, Chapter One)	<ul style="list-style-type: none">▪ New Retail Offer▪ New bank Offer▪ Comparison between the two developments▪ Summary of the findings	1.1 1.2 1.3 1.4
The organisational sensemaking and learning process during the development of the new services.(Part Four Chapter Two) — —	<ul style="list-style-type: none">▪ Findings on the individual sensemaking.▪ Individual testing of the interpretations.▪ Selection of the interpretations.▪ Creating the network that share the interpretations▪ Managing the interpretation process▪ The kind of development problem that has been solved by learning strategies▪ The kind of learning actions▪ The process of learning	2.1.1 2.1.2 2.1.3 2.1.4 2.1.5 2.2 2.2.3 2.2.4
Validation of the OL models for new service development (Part Four Chapter Three)	<ul style="list-style-type: none">▪ N.S.D. achieved through an organisational learning process.▪ Links with previous research on service innovation▪ Reconsidering the main stages of N.S.D. according to the findings	3.1; 3.2; 3.3 3.4

1. WHAT HAS CHANGED DURING THE DEVELOPMENT PROCESS

Due to the methodology we adopted, it has been possible to observe the transformations occurring throughout the development process. As reviewed in the first chapter, the production of services relies on a system made up of four components including the processes, the staff, the infrastructures and the client. The underlying assumption of this statement is that a change in the final delivery must be the result of a change of one or many of those components. Thus we will define what has been transformed by the development in order to produce the final result.

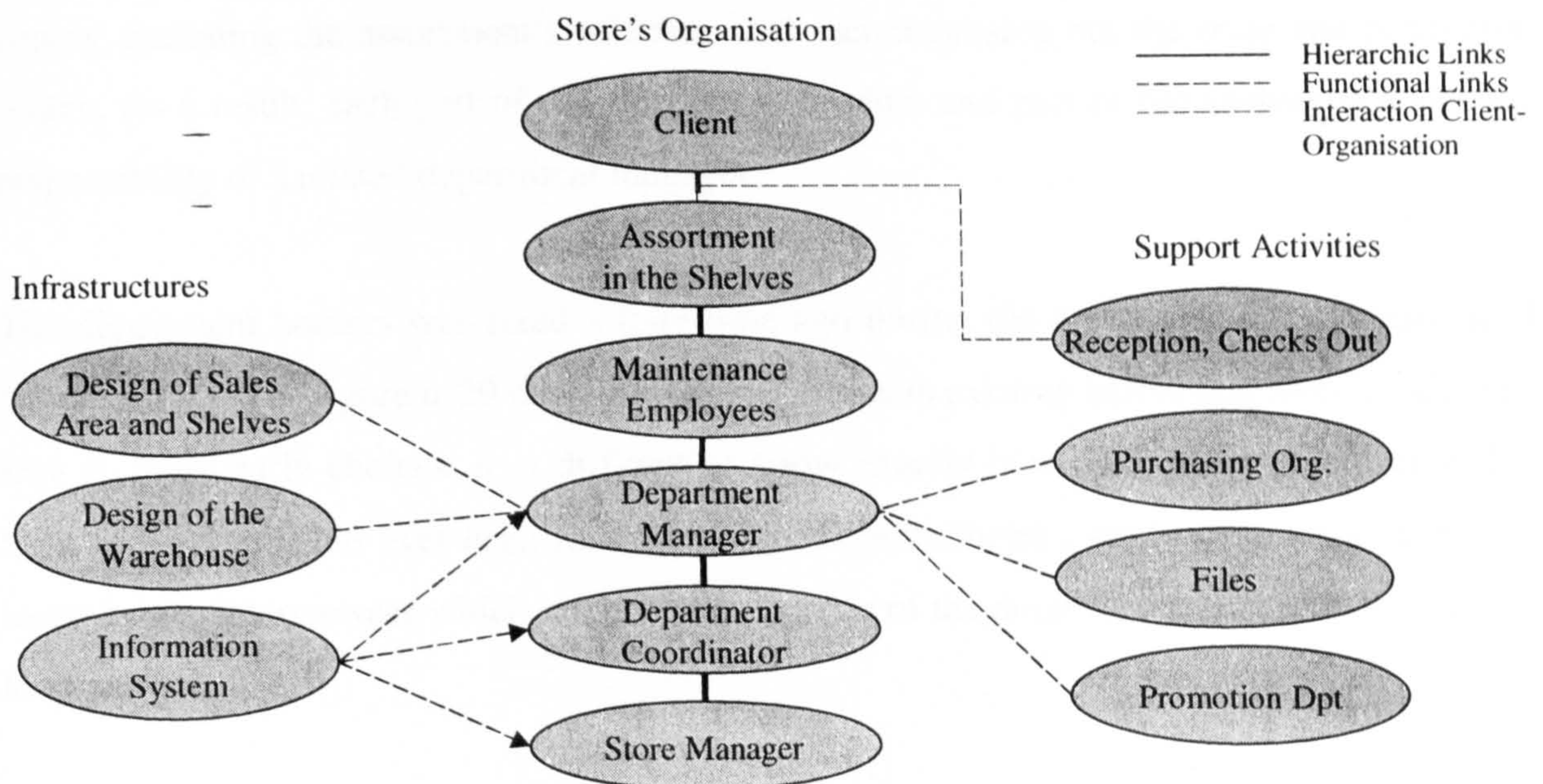
The longitudinal study of innovation provided a unique standpoint to observe the way services have been produced before and after the launch. We intend to describe, the systems that contribute to create the final output for the two companies. Then we will describe what has changed in the initial system due to the innovation. Then we will compare the two systems to conclude the relevancy of inter-sectorial comparisons for innovation in order to reveal common patterns for the change.

This part of the findings has been based on multiple sources of data. First, we investigated the formal organisational chart. This revealed the definition of the main departments, a rough description of their jobs and the hierarchic structure of the entire organisation. Moreover, during the interviews with the main respondents, we focused on the formal and informal functional links that relate the respondents to the other part of the organisation. This task is easier to achieve for the formal links than for the informal one. Due to our methodology, it was possible to state and observe the existence and function of some of them. Nevertheless, it has been impossible to cover extensively the set of the informal contacts, conversations and interactions that influenced the development process. It must be said that this is also the case of one of our respondents. None of the actors in the organisations involved in the development process are in a position to access to the entire body of data exchange and processed by all the other actors. In order to limit the potential negative effects of this situation, we presented the formal results of our investigation to the research committee in order to obtain confirmation of their relevance.

1.1. PRODUCING THE RETAIL OFFER.

The production of a final supply displayed on the shelves for the consumers is not the easy task one can imagine. Many sub-parts of the organisation, located in different spaces and requiring specific skills, is required to achieve both the client's satisfaction and the firm's profitability. The production of the supply for non-food products necessitates the system described in figure n°28.

Figure n°28: CORA Non-food Organisation



The servuction process begins with the participation of the clients themselves who must be considered as being a co-producer of the process. By choosing the place where he/she will go and stop, the client determines one part of their purchasing process. He can decide if the process is long or short, based on rational or impulsive choices, and made of an entire or partial visit of the store. This means that the shelves, which are the least visited, are due to yield the lower incomes. As a consequence, the way the store is organised, by orientating the flows of visitors contributes to the turnover of each department. The basis of the Cora innovation lies in the transformation of the way the shelves are displaying the products.

However, before describing it, we intend to introduce the organisation that produces the supply as shown. Three means contribute to the result: the hierarchic line within a store, the functional links with other departments, and the physical settings.

1.1.1. The Store 's Hierarchical Line

The vertical links represent the hierarchical line of decisions. The position of the department manager is central in the building of the offer. First, because he/she may analyse the turnover and profitability of each shelf, the department manager is in a position to understand the needs and expectations of the local clients. As a response, he/she is able to build the appropriate supply, including the assortment's selection and merchandising but the price and promotion policy. As a result, each part of the store, each product and part of the shelves is under the responsibility of a related department manager.

The department borders was fixed a long time ago during the creation and the extension of hypermarkets. The figure n°29 describes the departments existing before and after the change. Due to those early choices, it is difficult to know exactly how the current organisation has been decided, if it has ever been formally decided. Nevertheless, many statements have been made by our interviewees which provided the reasons of the duration of some of the rules over long periods.

First, this organisation of the store between departments has not been designed on the basis of consumer expectations but mainly by integrating internal constraints and know how. The first choice for selecting the division of the store has been the supplier organisation. As initially the department manager was in charge of negotiating with the suppliers, products have been regrouped by supplier's categories. Textile suppliers have been regrouped within the same department whatever the products may be used for clothing or for interiors. Similarly, the producers of electrical appliances have been regrouped within the same department. This choice resulted in shelves regrouping a heterogeneous collection of electrical devices such as electric shavers, electric kettles, irons and vacuum cleaners.

Figure n°29: Comparisons of the categories of products before and after the change

Existing categories BEFORE the change	Main departments	Existing categories AFTER the change	Main departments
<i>Non Food Products self-service</i>	1- Do it Yourself (paint, tools, hardware, electricity, interiors) 2- Household goods (crookery, dishes, cleaning products, accessories) 3- Culture (stationery, books, records, Office goods) 4- Toys, Sports 5- Garden's Furniture, Cars, Sports — 6- Gardening (tools, fertiliser and others products, accessories for pets, accessories for christmas) —	<i>Univers Culture and Leisure</i>	1- Hardware HiFI, Video, Camera, Computer, Telephon 2- Software Hifi, Video, Camera, Computer 3- Books, Stationery, Luggages 4- Toys, Sports
<i>Non Food Products with Service</i>	1- Electric appliance (big, small, water and air processing) 2- Audio and Video (HiFi, televisions, video, tapes, accessories) 3- Cameras (Cameras, electronic games) 4- Furniture (Bed, chairs, tables, lamps, bulbs) 5- After Sales Services (including delivery)	<i>Univers Interiors</i>	1- Electric Appliances 2- Household Linen, Interiors, Cooking, Cleaning products, 3- Tools, Paint, Electricity, Cars Accessories, Hardware 4- Gardening, Garden's Furniture
<i>Clothes</i>	1- Household Linen 2- Baby 3- Children 4- Woman 5- Men 6- Shoes 7- Jewellery and fashion accessories	<i>Univers Person</i>	1- O to 16 year old 2- Woman 3- Men 4- Shoes, Jewellery and fashion accessories,

The second criteria, which contributed to the organisation of the store, was specific know-how. For many departments such as textiles, bakery, butchery and the fish shop, the personnel's skills and competencies are so specific that they are difficult to transfer to other parts of the store. Though being less important, knowledge of the market and segments and

the best way to negotiate with some suppliers influenced the organisational design. As a consequence, people are grouped according to their expertise, and managed by the department manager who knows the way things must be produced.

The third criteria, which contributed to setting the borders, is the importance of the department itself. Each of the subdivisions corresponded to the human capacity of the department team to achieve all the operations processes. As a result, the balance between the different departments integrated the amount of work required to develop an offer. The tasks included the management of the stock, the negotiation with the suppliers, the ordering process, the display of the products within the shelves, the implementation of the promotional offers and the management of the staff which contributed to those purposes. This criterion induced an important stage in the process of change. The validation of the new project required balancing the new departments in order to make their management possible. Thus, the development team had to produce an important simulation. The turnover of the new departments was simulated in order to verify the potential balance of the new borders.

The results of those choices made in the past are that the current organisation of the store is formally defined as described in the annexes n°2. This presentation covers a nomenclature of the products formally distributed in each department. Three broad classes of products have been adopted: clothing (such as the ladies, men's and children's clothes), non-food products without service (such as the books, toys, sport and households products) and non-food products with services (such as the electric appliance, the video and Hi Fi products). As a result, the department borders may be considered as very rigid, and have not really changed over the past years. It may be noticed on the annexe n°2 that most of the existing categories had been set between 1990 and 1993.

In order to avoid a too fragmented organisation, general management created middle management structures which has been called the "department co-ordinators". The department co-ordinators are in direct hierarchic responsibility for a cluster of departments and supervise their activity and management. Those supervisors report to the store manager and participate in the different working groups.

1.1.2. The functional Links

Though being at the centre of the supplies building, the departments could not achieve their tasks alone. They needed the help of many transversal organisations, which are the purchasing department, the promotion department and the “ Thematic Working Groups ” or “TWG”. We intend to describe the role of each of them briefly.

The mission of the purchasing department is to negotiate goods in bulk by adding the needs of each store. This contributes to the increase of power of negotiation with suppliers and therefore to obtain better conditions for the customers. To do so entails adopting the same purchasing organisation as in the stores. Each department has its equivalent in the purchasing organisation. The people in charge of one department analyse the total amount of sales for each product and plan the meetings with the suppliers. Therefore, the organisation of the purchase department looked like the one of the store, including the same job division by department and the use of the same information system.

Even the promotion department adopted this organisation in the promotional leaflets that are produced each week. This department selects the products with the purchasing organisation, the “TWG” after having discussed with some department managers. The purpose of the choice is to attract the customer by making strong price promotions. Because such leaflets have a good commercial effect, the communication department is obliged to include all the departments in the same leaflet, excepted during the special events, for example the start of the new school year or Christmas.

Due to this choice, the leaflets displayed a large and heterogeneous collection of products, clustered without any other apparent logic than their belonging to a department. The examination of the pages 2 and 3 of the leaflet reproduced on the annexe n°3 provided a good illustration of this policy. The products are regrouped according to the organisation of the departments. The logic of display is one of the internal broad category “non-food products with after sales services”. On those pages one can identify offers for two cameras, one computer and its after sales service offer, one scanner, many electronic games, two Hi-Fi, one Television, four mobile phones, a promotion for the electric appliance, and a promotional offer for an electronic bike. As a result, the presentation of the offer does not adopt the logic

of a customer purchase or interest. The promotional documents are organised according to the internal organisation.

The “ Thematic Working Groups ” have to deal with the development of each department or activity of the stores. They resulted from the general management’s will to take decentralised decisions, as close as possible from the store. This organisation is very specific to Cora. The “ TWG ” are made of working groups of approximately 15 people coming from different stores and including one store manager, many co-ordinators, department managers and employees. There are as many “ TWG ” as departments plus some “ TWG ” focused on a given activity. For example, one “ TWG ” is in charge of the Cora credit card and one another is in charge of the after sales service. Those groups have to collect the information coming from the departments and to submit improvement proposals. They are not in a position to impose solutions but to recommend them to the store’s managers who can adopt them or not. Those groups are efficient each time a specific project necessitates more means than one department manager could produce. The development of a credit card, implemented in all the stores resulted from the work of the “ Card TWG ”. This development should have been impossible to achieve for one person in one store.

1.1.3. Physical settings

The physical settings contribute greatly to the definition of the departments. The shelves, the warehouse and the information system are necessary to produce the final offer. Those devices appeared to be both the support of the delivery processes but also a part of the memory of the organisation. In order to have a direct and better information about this important part of the organisational memory, we asked each store to send us a map of the store before and after the change. This provided an important way of understanding the local differences. Moreover, we had the opportunity to visit 11 stores extensively. During those visits, notes were written in order to remember the main observations and comparisons between the stores.

Though products and shelves are regularly removed according to the promotions and commercial events, the concept of the selling area has not really changed since the creation of the first CORA’s outlets. The shelves are organised on the basis of linear spaces, where

products are displayed on the coldest way that may be chosen. All effort is made to concentrate the maximum product on a minimum space in order to maximise the potential turnover per square meter. The shelves are displayed within the store according to the structure of the departments. Each of them has its own space, both in the surface area and in the number of shelves. A very similar implementation is realised all over the sixty hypermarkets, with differences mainly due to their size. The plans given in the annexe n°4 A, B, C, D. represent three of those implementations of the store. Those plans revealed that differences between the outlets are made in the size of the store, in its shape and in the place given to the non-food products. A fast comparison of the store of Sarrebourg with that of Forbach illustrated this point. Nevertheless, some similarities may also be observed. The most important of it is the positioning of the textile products. For the entire network they are placed between the food and non-food products.

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The global design is based on the functional warehouse's organisation principles. This linear implementation facilitated the product's re-assortment and by then contributed to the reduction of the stock breaking and to the stock's holding costs in the sales area. But it gave very little space to emphasise the scenery of the products or to bring information to the clients. Compared with specialised retailers, which emphasised the scenery of the products, the contrast is striking. There are no open spaces letting places to show off the products. There are no place where the people can sit down. Each product remains in its department's shelves.

Changing this organisation is a tremendous challenge. It represents no less than 300.000 square meters to remove at least. This change may take more than one week for each store and entail a lot of inconvenience for both the staff and for the customer. During the change it is difficult to maintain access to the products. As a result the changes are often realised during the night and this alters the way managers work. The other trouble resulting from the change is that clients must re-learn where their products are. As this operation is costly in terms of time, it creates negative feeling against the store. It must be said that during those kind of changes, the common process checking-ordering-stocking-displaying the products are often disrupted with as a result losses of products, stock breaking and finally an increase in the labour costs. This investment is therefore considered as a major event and is in most of the cases associated to the refurbishment of the stores. Therefore, the costs of physically changing the organisation of shelf's layout was a factor reinforcing department's boundaries.

The warehouses in the stores are as important as the shelves themselves, though the customer does not know them. When products are delivered to the store, they are physically stocked in the warehouses before being displayed in the sales area. Many different areas may be distinguished according to the specific equipment required to manipulate and stock each category of product. The example of frozen products, and clothing among others emphasised the necessity of specialisation. Similarly, each department has its own organisation for the warehouse, even if the storage technology remains simple. The reasons are that it is easier for the employees to find the products they want to display in the store if they concentrate them in the same part of the warehouse. The final result is that the storage area is split between the departments who wish to keep this space for their own use. This point contributes also establishing and solidifying the borderlines between the departments.

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The information system contributes mainly to the same result. Each time a sale is registered by the check out's scanner, the amount is added to the departments turnover. Each day, week, month and year, the turnover is summarised and compared with the results of the previous period. The information provides the basis of a gap analysis which is used by the department manager to guide its commercial policy and also by the stores management to assess the department manager. Similarly, the same information is used to compare the performances between the same department of the different stores. Due to those standardised results, recorded in a data basis, each department manager has the access to the entire organisation and may compare his own results with that of another department elsewhere in the organisation.

Producing such information requires formally identifying the links between each product and department. This contributed to reinforce the limits of the department. Once a product belongs to one department, it is not easy to change it without creating administrative costs (at least it must be done in the 60 hypermarkets) and also a loss in the period-to-period comparisons. Even in the case of its removal from one part of the store to another, for example due to promotional reasons, it will last in the same department. People in charge of its ordering and management will remain the same and will be assessed on the same basis.

1.1.4. Limits of the previous offer

The final result, the product's and service's supplies delivered in the shelves is as fragmented as the organisation and do not necessarily respond to the interests and expectations of the consumers. Many examples could illustrate this point. If a young mother is interested in buying things for her baby, she will have to go to the textile department for the clothes, to the electric appliance department for the bottle heater, to the paper products department for the nappies, to the grocery department for the food. The similar example may be given for the sports products. One part of them is displayed among the textile department, another part is regrouped with the shoes department, the last part of them being displayed with the sport equipment as bicycles, balls, tennis racket and skis. The same statement may be done for the housewives interested in the decorating products but also for the culture and leisure products. The organisation adopted a long time ago makes purchasing product impossible according to a centre of interest or to a broad category of needs.

Those statements lead us to consider that the organisation and the supply are in this case closely intricate. Due to an initial organisation of the purchase per group of suppliers, the hypermarket concept "all under the same roof" resulted in the sharing out of the products between the business units which are the departments. As a result, the consumer must adapt its behaviour to a final offer. The process of purchase is made by a visit of the different shelves, dividing up the assortment with the logic of the departments rather than the one of the thematic interest of the customer. Changing this state, regrouping differently the products in order to generate more impulsive purchase, means changing this current division.

Therefore, in this case, changing the way products are displayed within the store means changing the entire system that produces the final result. The innovation could not be considered, as it is generally admitted for products, to be the creation of the production process. The redefinition of the service offer implies redesigning the entire system, including the personnel's competencies, the information systems, the physical settings of the store, and the client's knowledge of the store.

1.1.5. The turn to the “ Universe Concept”

This way of considering the purchasing process is essential to understand the “ Universe ” innovation. One point that will be radically changed is the process of purchasing itself. The “ Universe ” concept consists in adopting a thematic disposal of the products. Rather than displaying the products by categories of suppliers, the stores will have to regroup the products by categories of purchase.

The examination of the structures as summarised in figure n°26 (see the full detailed list in the annexes 2) revealed a strong reorganisation of the categories. We intend to provide some illustration of those differences. Before the change, the non-food products have been divided within three main categories, non-food products in self-service, non-food products with services and textile products. Three principles guided the organisational choices. The supply chain provided the first principle of the organisational feature. This is the case for the textile products that are separated from the rest of the non food products. But it is the same for the electric appliances department. It regrouped the products coming from one kind of suppliers without considering their use or destination. The necessity to give advice on products is the second guiding principle adopted to set the organisation. The self-services goods are separated from the products that required advice or entailed further services as delivery or after sales warranty. As a result, the department co-ordinator in charge of the non food product with service had to deal with the management of the sales people, regardless of their section. The third guiding principle is the belonging to a main theme such as the garden, the car or sport.

As we said previously, those guiding principles led to the dispersion of the different range of products within the store. Those choices obliged the consumer who is interested in a specific theme to walk along nearly all the aisles in order to find the required products. The “Universe” concept provides the opportunity to transform the product’s disposal within the store. As described above, the categories of product have been recreated by changing the order and focus of the guiding principles adopted previously. The main guiding principle have been the purchase themes. As a result three themes emerge from the initial ideas: the universe of culture and leisure, the universe of interior and the universe of the person. Each of them contributed to the clarification of the offer. As example, the Household Linen previously included in the textile department has been displayed near the ornamental goods, belonging to

the interior's category. Similarly the tapes are included in the culture universe and may be placed near the recorded tapes and videos. By placing jewellery near the textile in the universe of the person, it will be possible to co-ordinate the design of both collections.

This choice leads us to abandon the internal emphasis previously adopted for the organisational design. As a result, the decision to change the categories of product impact on the entire system previously designed to create the offer. The department managers had to learn to manage new products and to deal with new suppliers, department co-ordinators to manage the sales staff, the store manager to reinvent a sales area, the purchasing department to build a new supply, the computer department to create a new report sheet including the historical series of figure, the promotion department to create a new style of campaign, and finally the consumer to learn the new place of each product. In this case it could be said that the "Universe Project" impact on the whole of the organisation features included the individual competencies. One can speak of a major change in the final offer but also in the organisation itself.

1.2. PRODUCING THE BANK OFFER.

The building of the bank's offer also relies on a system. The final result is impossible to achieve without the co-ordinated participation of each component of the organisation. Because retailing and bank organisation have very little in common, the nature and the impact of the innovation on the system are difficult to compare. We intend here to describe the means used by the banks to produce the service for the client, then to analyse what will change in the organisation due to the production of the new product.

1.2.1. The Credit Mutuel's Organisation.

The production of the financial service relies on the following components. Due to the complex nature of a federative bank, we focused on the marketing part of the organisation as presented in the figure n°30. This deliberate choice leads to simplifying the presentation of

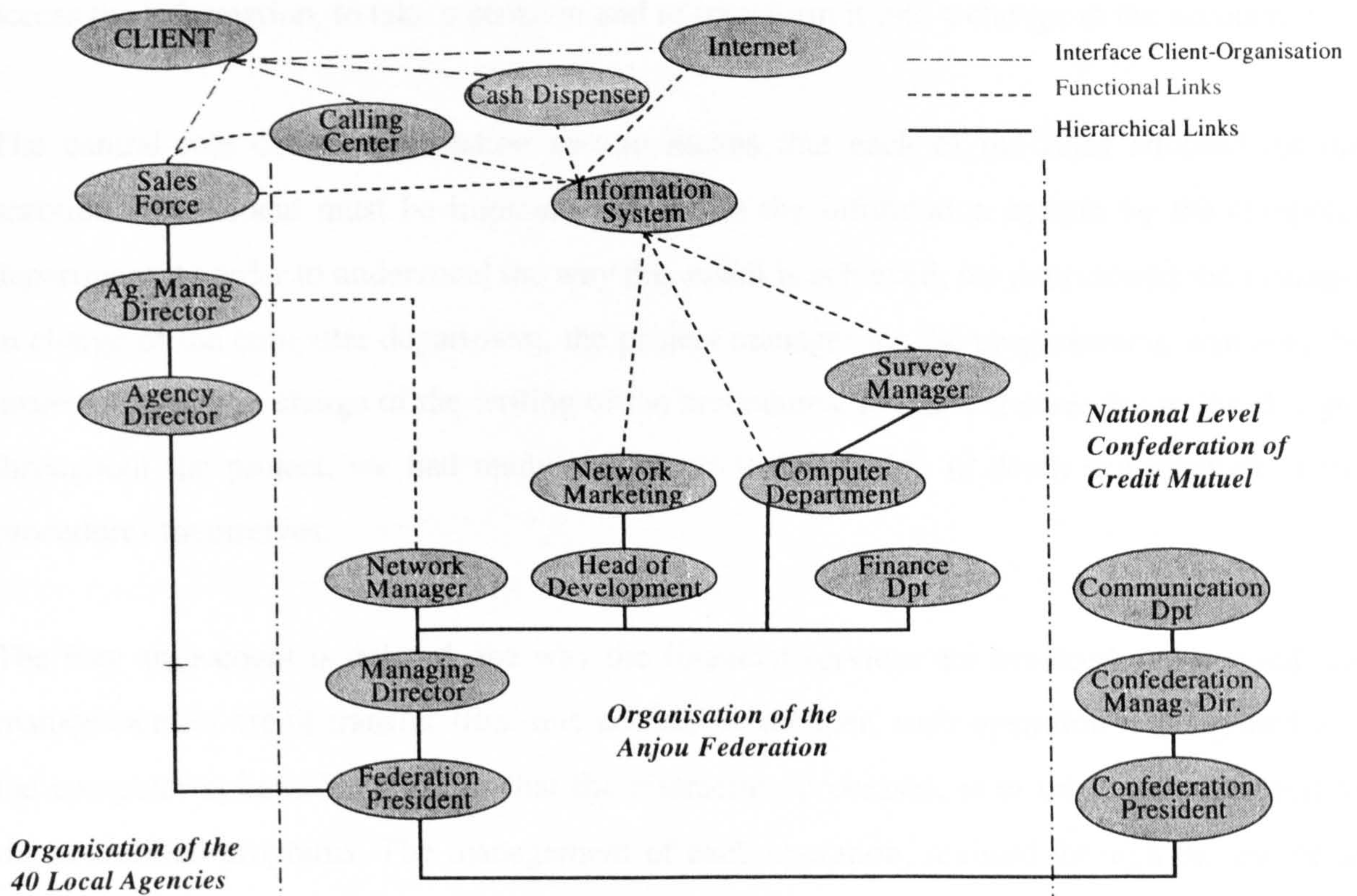
some departments more focused on the management of the administrative part of the activity. Nevertheless, we presented all the actors directly involved in the innovative process.

The organisational design is made up of three levels. Each of those levels has its own legal autonomy with its own board. The first level, in charge of the direct interaction with the final customer, is made up of a network of 40 local agencies resulting in 100 outlets. This network provides a good knowledge of the local projects. Because of this proximity, the local agencies are in a situation to take proactive initiative, which contributes to the results. The second level is the regional federation, which regroups the local agencies. The federation finances the projects of the local agencies and also provides the computer, marketing and management means used locally. The federation is particularly in charge of the management of the sales force, which remain under the hierarchic authority of the local agency managing director.

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Figure n°30: Producing the financial offer



The national level produces some centralised departments, such as the communication department, in charge of the creation of the national advertising campaigns, or the legal department. Because the bank is not centralised, the intermediate level, the federation, is in charge of the product management. It must create the offers, define the procedures to implement them in the information system, follow the results, design the marketing plan, motivate the sales force. Therefore, the financial products may be either national or local. As consequence, the power to decide what must be proposed to the customer is strongly anchored in this medium level.

The first statement about the offer is that the access to the financial products may be achieved through many means. As a result, the traditional interaction client-sales person tends to be replaced for some transactions by different electronic means, such as the cash dispenser, the internet access and the calling centre. The only way to use such a diversity of means

efficiently is to centralise all the information related to a customer account in the information system. Thus, through the interface computer-client or computer-salesperson, it is possible to access the information, to take a decision and to transform it into a change in the account.

The central role of the information system means that each of the rules adopted for the account management must be implemented within the information system by the computer department. In order to understand the way this result is achieved, we interviewed the manager in charge of the computer department, the project manager for the programming, and also the project manager in charge of the writing of the procedures. In this last case, due to the changes throughout the project, we had many interviews that included in depth examination of the procedures themselves.

The way an account is debited, the way the financial services are invoiced and debited, the management of credit transfer from one account to another, each operation is integrated into the computer system. This means that the interaction processes, is in this case structured by the predefined programs. The management of each operation, realised through the use of an electronic interface, is strictly programmed and lets very few possibilities for the consumer to improvise or innovate. Even in the case of a less informal client-salesperson relationship, the information required to take a decision, the potential simulation of the effect of the decision must be defined before the interaction occurs in order to be included in the electronic office of each salesperson. This rigid frame emphasises the standardisation of the financial offers. Due to the computerised framework, each offer previously designed, presents very few possibilities to be adapted to the local expectations or contexts.

As a result, three main actors are in a position to build the final offers. First, the strategic position and function of the information system confers to the computer department an enormous importance in the system. The reliability of the bank is entirely linked to the reliability of the computerised network supporting the information system. As the core production of the bank is the transformation of the information related to the accounts, the computer department may be considered as the production plant. Therefore, its role is to transfer the service specifications into programs and then, to implement them into the central computer. This department is also in charge of the design of the interface screens that will be used by the salespersons and the clients when a decision has to be taken. Due to the

requirements of reliability involving high investments and competencies, but also to changing technologies and financial environments, this department has been under the constant pressure of innovative projects during the years 1998-2000. Integration of the Euro currency, the re-design of the tools for the electronic office, the creation of the Internet interface have been implemented amongst many other projects including the promotional offers and the launching of new services.

To design the programs, the computer department must have the specifications of the service or of the screens required. Two departments will be involved in the writing of the procedures. First, the “offer marketing” is in charge of the tight description of each procedure related to the management of an account. In the case of the new financial packages, no less than 70 pages were required to detail each specification and their different variations. This description includes a definition of the principle of the related service and in some cases, the definition of customer requirements such as the age for example. This definition is followed by the principles of management including the different scenarios linked to the related events. Those scenarios define how information is transformed and the operations which are triggered as for example the automatic sending of a mailing.

To be performed, this work entails mastering many kinds of knowledge and integrating multiple constraints in the design. First, it requires knowing the market side of the offer, including the consumer expectations and the competitor’s products. This knowledge is partially provided by the “network marketing”, which will be detailed later, by the existing internal databases and by the consumer surveys. But the accurate writing of the procedures also requires knowing what is or not possible to produce for the computer department. Because the choice of one solution may be costly in terms of budget but also in terms of time, a good knowledge of the computer’s possibilities and constraints will facilitate the development. The conception of the procedures requires also a good knowledge of the legal constraints of the products, which will strongly influence the scenarios. For example, the French legal system offers the buyer of a credit the possibility changing his mind seven days after the signature of the contract. This entails the integration of a specific scenario into the program which will give the possibility to nullify the decision. Due to those requirements, the “offer marketing” plays a central role in the definition of what will be finally perceived by the consumer.

The third department, which plays a central role in the definition of the offer, is the “network marketing”. This department is in charge of creating the promotional operations that will contribute to developing the sales and motivating the front-line people. Because they are closely linked to the network, this department is well aware of the expectations of the client and sales force. Its collaboration in the common operations is to select the commercial means which should be used, to design the promotions, to implement them within the network and to analyse the results. To do so, they have to collaborate with the “offer marketing department” who will write the procedures which must be implemented within the information system. Similarly, the “network marketing department” plays a central role in the design or in the improvement of the information system. For example it contributed strongly in the redesign of the electronic office used by the sales force. Similarly, during the innovation process, they were involved in many actions. First they initiated a survey which aimed at measuring the client’s expectations about the new packages. This first work provided useful results to define the number of packages which must be created in order to satisfy all the segments. Second, they tested the first proposal to a selection of 50 consumers. They organised a simulation with the help of the sales force. The salesperson had to meet their clients and to make a commercial offer of one package. A measurement of the results provided a first validation of both the interest of the offer and also of the internal agreement. Third, the department was in charge of the training and motivation of the sales force for the launching period. As the relationship with the client has been changed by the concept of the package, the sales force had to meet all the clients, to convince them of the interest of the new offer, to analyse the account profile in order to choose one package amongst the three, and to fulfil the administrative part of the offer. This could not have been achieved without the support of the “network marketing” department which created the training tools, defined detailed goals and created the promotional documents.

Finally, and because the Credit Mutuel d’Anjou is a member of a national federation, the network marketing had to co-operate with the national communication department, which created the national promotional means common to all the local federations. In order to collect data on the interactions between those two levels, the manager of the communication department was interviewed. This provided the way to cross the data gathered at one level. This functional link entails another kind of negotiation. During the creation of the offers, the

definition of some attributes common to all the federation must be forecasted in order to support a national promotion as advertising or leaflets. As the Credit Mutuel remains decentralised, the decision of this set of common attributes is not an easy task. As a result, many financial offers are not similar from one federation to another. This created a constant negotiation process. On the one hand, only similar products provide economies of scales in the promotion; But on the other hand, each local federation will use the design of the offer to promote its own internal and external purposes. The result of this decentralised organisation is that the relationship of the local federation with the national confederation must be observed because it influenced the final design.

The examination of the system, which supported the creation of the offer, revealed a very complex set of interactions between different parts and sub-parts of the organisation. What has to be changed in this case is a very intricate set of tangible evidence such as the contracts or the computer's screens, and of intangible objects (procedures, salesforce's knowledge, computer programs). This change is achieved through the interactions of each of the subparts of the organisation which finally has to transform only a small part of the object. One of the first statements, which must be done now, is that none of the members of this organisation is in a situation to master the entire system. As a result, a normative perspective, which should consider the process as the achievement of a pre-defined and idealistic goal, should lead to a dead-end. Given the systemic nature of what has to be transformed, the understanding of the innovation is the analysis of the means used by the actors to transform their part of the system and of the examination of the reasons which lead them to this change. We intend now to review those different points for the Credit Mutuel d'Anjou.

1.2.2. The new “service package offer”.

The guiding principle of the new package is to offer to the customer a new exchange principle. As the positive account will be credited, each financial service will be invoiced explicitly. This constitutes the basis of the initial intent named “facturation-rémunération” (invoicing-remuneration). One of the purposes of the bank, due to the change of the financial context as introduced before, was to substitute the previous opaque way of invoicing the services ²⁶² a new and transparent system. This requires deciding the cost of each operation and invoicing it each time it occurred in a given account. Those operations covered amongst others the use of the credit cards, the overdraft authorisations, bank transfer, subscription for the use of Internet and the use of checks, which are free of charge today. To do so, the bank had two possibilities. It was possible to invoice each operation separately and to sum up the final expenses. Though this principle guarantees a good transparency, the client may find linking each operation to each invoice difficult and therefore identifying the source of expenses. Moreover, as the amount will differ each month, the client may find managing its account difficult. Those statements led to the second possibility. The bank could create a package, including a given number of each of the operations, and may invoice the client on a fixed rate each month. With such a principle, transparency is maintained through a detailed invoice. For the client, the system may be easier to use in the management of the account. Nevertheless, it requires fixing the nature and number of operation included in the packages and the number of different packages proposed to the clients.

The final choices were adopted as follows:

- Three packages for three levels of consumption. Those packages present different possibilities as described below in the figure n°31 (See the full details in the Annexes n°3).
- The possibility of invoicing each operation separately.
- Special offer for students.

²⁶² As described previously, the bank achieved its profitability through different means. One of them consist to increase the costs of the different credits.

Figure n°31: The content of the final offer.

Name of the Package	Content of the offer.
Tranquilité	Basic Offer: Check account, Maestro Credit Card, Monthly Statements, Access to Internet access, Automatic savings of the positive balance, Overdraft Tolerance of 5000 frs. Options: Personal Insurance, Second Credit Card, Weekly Statements, Full Distance Banking Service, Revolving Credit, Credit Card for the Revolving Account.
Confort	Basic Offer: Check account, Visa of MasterCard International Credit Card, Monthly Statements, Access to Internet access, Automatic savings of the positive balance, Overdraft Tolerance of 10.000frs Options: Personal Insurance, Second Credit Card, Weekly Statements, Full Distance Banking Service, Revolving Credit, Credit Card for the Revolving Account.
Sérénité — —	Basic Offer: Check account, International Credit Card, Monthly Statements, Access to Internet access, Automatic savings of the positive balance, Overdraft Tolerance of 10.000 frs to 30.000 frs. Options: Personal Insurance, Second Credit Card, Weekly Statements, Full Distance Banking Service, Revolving Credit, Credit Card for the Revolving Account.
Jeunes	Basic Offer: Check account, International Credit Card, Monthly Statements, Access to Internet access, Automatic savings of the positive balance, Overdraft Tolerance of 2.000 frs. Options: Personal Insurance, Second Credit Card, Weekly Statements, Full Distance Banking Service, Revolving Credit, Credit Card for the Revolving Account.

The creation of such offer entails the transformation of the entire production system. First, the information system must be reprogrammed. Each operation must trigger a special account that will be used to sum up the administrative movements in order to write the final invoice. Moreover, separate procedures must be fixed each time the number of operations exceeds the forecasted number. The electronic office must integrate the information that will be used to select one package adapted to the use of the account. Finally, the client should also consult its account and understand the invoices either through the use of the cash dispenser, Internet and the bank statements.

Second, the creation and the implementation of the packages also entail the training of the sales force. As the packages are not known by the client, each salesperson will have to meet him, to explain the principles of the offer, to convince them of the interest of one choice by making a simulation, and to establish the contract. Once the client has agreed, the front line people must be able to give advice and to help to find appropriate solutions to the encountered problems. Doing those operations requires a good knowledge of the way the system works, of the consumer expectations and of the arguments that will be used to convince the client.

Third, the customer must also be trained to use this innovation mainly because the new offer entails a change in the consumer's behaviour. Rather than using indifferently the checks, the credit cards or the credit transfer in order to pay, the client will have to follow the level of debits already realised, to compare it to the total amount included in the package and then to choose its payment means. This requires more attention than before and to use the different information means in order to adopt one choice. If not made aware of this new procedure, the client's behaviour may generate higher billings and thus deceptive feelings. Training the customer to adopt a satisfactory behaviour has been considered as a commercial stake by the bank. Selling the package is not sufficient to warranty a good level of satisfaction. Training the client is directly induced by the change in the use of the account.

Finally, the offer must be promoted before, during and after the launch in order to reinforce the work achieved by the front line people. This requires creating promotional documents, to advertise the offer on the different media, and to formally explain the offer to the potential client. Though what has to be said is new, the way those means are realised is well known by the promotion department. Each time a promotional operation or a launching is decided, very similar means are used in order to promote the service.

All those changes have a major impact on the bank both internally and externally. They require redefining the internal and external processes of interaction between the client and the organisation but also within the organisation, between each staff's members and the whole organisation. In that sense, the innovation created a change in the entire system, including nearly all the sub-parts of it. Because the offer is produced by interaction, its change induces an organisational change where each individual has to redefine its role and function. Service

innovation is a systemic innovation and this appears to be common to the two cases we analysed.

1.3. COMPARING THE TWO DEVELOPMENT PROCESSES

The comparison of the two offers may appear to be a pure intellectual speculation. Because of such different final propositions, the offers have very little in common. In one case, the newness is based on a different display of the delivered products, in the other, the newness is based on the way the bank will invoice the management of the account. To the observation of the offers, we added the description of the main stages of the development processes in the two cases. This process is based on the data extracted from the written reports and from the interviews. Each time a respondent reported a crucial decision, we mentioned it. The verification of the information was done by two means. First, we presented the entire process to the research committee in order to validate formally the data. Moreover we investigated the written reports in order to validate the declarations. This investigation provided a set of valid chronological events. This had never been done in either of the two firms. The two processes are described in the annexe n°5A for Cora and n°5B for the Credit Mutuel. They have been used as a database of the events linked to the development process.

Our observations revealed that the following points are the sources of the difference. The interaction processes between the firm and the client are not comparable. The nature of each stage, their number, their duration and occurrence have nothing in common. On one hand, the interaction process aims at the delivery of tangible goods. On the other hand, it aims at the transformation of the information relative to an account. Moreover, the client's behaviour required to perform the process is also different. In the case of retailing, the innovation will transform the course of the consumer within the sales area and the order of the shelves and products during this course. In the case of the bank, the innovation will change the way an account is managed, the kind of payment decisions and the invoicing of the services. In the case of retailing, the change is achieved through the removal of the shelves in the sales area when it is supported in the bank by the information system.

The comparison of the organisations adopted to produce the initial offer revealed more

difference than similarities. First, the analysis of the context of each organisation revealed that the innovation was triggered for different purposes. In one case, the innovation was initiated to react to specialised retailers, which threatens the development of hypermarkets. In the other case, the statement of an environmental change linked with Europe entail the transformation of the relationship with the client. Second, the global shape of the organisation, including its specialised sub-parts, has nothing in common. In the case of retailing, the organisation is strongly decentralised, each of the sub-part being very autonomous. In the bank, each Credit Mutuel federation appears to be very centralised. Moreover, the number and nature of the functional departments in charge of the servuction are as different as possible. Even in the case of similar expertise, as in the case of the computer department, the purposes and tasks are very different due to the specialised function of the information system. For the banks, the information system constitutes the offer in itself when it only supports the reporting in retailing. Finally, the co-ordination means are also different. The creation of the transversal working groups, which make sense in retailing, do not exist in the bank due to the presence on a same head office of all the managers involved in the decisions.

The statements of the existing differences emphasised how much the innovation projects are anchored in the existing contexts and systems. This contingency should lead to the conclusion that nothing common could link the different projects developed in the different sectors. By the similar reasoning, it can be said that even in the same firm, two successive innovative projects are impossible to compare. The people and the organisation have probably changed according to the contexts, the competitor's positions and the consumer's habits. This leads to the conclusion that nothing could be learned from the innovation and from the research on innovation. In such a perspective, the lessons from the past would be ineffectual for the future. Though those statements remain valid in the two cases, two statements provide further perspectives of progress. In both cases, the innovation relies on the change of the processes and in both cases, the redesign of the processes induces an organisational change.

1.3.1. Redesigning the processes

First, many common patterns may be observed during the change. One of them is that the creation of innovation relies on the definition of a new interaction process. Even in the case of such different offers, it may be observed that the production of innovation relies on the definition of a new process, in the building of new stages and/or of their order during the delivery, in the definition of the events which will trigger them. In the two cases, producing an innovation means creating a new scenario, defining the role of each of the actors, building the physical evidence that will support the interactions between the actors during the performance. In the two cases the working group in charge of the development is in a position to write a scenario describing what occurs in this or that case. By saying to the front line people through different means the kind of behaviour they have to produce and by providing the means which will nurture and support them, the working team creates a new play. In the two cases, the innovation process requires achieving similar tasks summarised through the metaphor of the theatre. We tried to compare the purchase scenarios in the two cases, before and after the change. We identified for the retailing one of the new “Universe” and tried to analyse each stage of the process. The result is displayed as follows in figure n°32.

Figure n°32: Comparison of the purchasing scenario for retailing: the case the domestic products.

Main stages before the change	Main stages after the change
Entrance in the store	Entrance in the store
Identification of the location of the shelves displaying the range of dishes	Identification of the Interior’s “Universe”
Go there	Go there
Scan the range in order to discover the offer	Scan the range in order to discover the offer. In this case, the “universes” organisation enlarges the number of items scanned by the client.
Choice of the Item	Choice of the item
Put it in the caddy	Faces textile, glasses and other range regrouped by their style and colours.
Move to another place in the store.	Select another item co-ordinated with the first on the basis of an impulsive purchase
	Put it in the caddie before moving to another part of the store.

The study of those two scenarios of purchase revealed that the new “universe” concept aims at enhancing the impulsive purchase by the association of products on the same displays. This

way of displaying the assortment will mean that in the same scanning the consumer will perceived more diversity than in the first case. For example, rather than comparing different kinds of plates, this scan will include the cutlery, the tablecloths and the glasses, all of them being matched in terms of style and colours. The expected result is the extension of the categories being compared by the client and thus increasing the purchase amount by client. Related to the two dimensions of the processes given by L Shostack (1987), the complexity and the divergence ²⁶³, the change of the offer reduces the divergence of purchasing for a given category of products by offering them on the same place. But it doesn't change the complexity of the process as the main stages, their number and nature hardly remained the same. It may marginally increase the complexity of the choices by mixing different categories linked through the design or the style.

The scenarios should describe the removal of the consumer flows within the store. If one "Universe" regroups the purchase for the interior's products, then, in comparison, there is a risk that the part of the store where the products were initially displayed suffers from a decreased number of visits. One example has been given by one department co-ordinator, who described the negative impact of the removal of the pet food shelves from the back to the middle of the selling area. Due to this removal, some less attractive shelves, which benefited from the traffic generated by the purchase of pet products, decreased from more than 30% each month. This example illustrated that the transformation of the scenarios could have indirect and negative effects on the sales of other parts of the store.

Designing and testing those scenarios may appear to be very complicated due to their potential divergence. A rigorous description of the new process should include multiple cases of purchase. For example it should describe the scenarios for the consumer which do not intend to purchase Interior's products and who are just exploring the store. Thus, a complete approach of the scenario should lead to identifying multiple circulation behaviours linked to multiple intentions of purchase.

As a result, the scenarios remained difficult to formalise. The organisation defined the tangible part of the changes as the disposal of the shelves, but did not define and measure the

²⁶³ Complexity refers to the number of the different stages required to perform the service, divergence refers to

change in the purchasing scenarios. Similarly, the tests which has been realised aims at the measurement of the result, the increase or not of the purchase, but not in the identification of the clusters of circulation and choice behaviours. The identification and the measurement of the intangible part of the scenario remained very difficult. Because of this complexity, the “Universe” concept has been defined on its global and tangible part and not on its analytical involvement.

The design of the interaction scenarios are more formalised for the case of the bank. Many reasons induce this greater standardisation of the process. First, as we reviewed before, the information system requires reducing the ambiguity of the operations. As a result, all of them must be rigorously detailed and written. This opens less variation in the interaction process. Such concepts as an “impulse purchase” is difficult to transfer to the bank sector. Nevertheless, the development managers recognise they will have to face uncertainty by including special stages in the selling process which has been settled as described in the figure n°33. As no similar product existed before the launching of the “package offer”, we compared the selling of this offer with a very similar one, the selling of a credit card which will be included in the new packages.

Figure n°33: Interaction process during the selling stage before and after the creation of the new bank package.

Main stages of a Credit Card Selling	Main stages of the Package Offer (Which include the use of a Credit Card)
Phone Call by the customer and appointment.	Phone Call by the bank and appointment.
Identification of the use of the credit card (local, international for example) and definition of the different options.	Introduction to the offer, its reason and interest for the client.
Definition of the total cost of the card including the options.	Simulation of the different packages on the account made on the basis of the previous periods.
Agreement and fulfilling of the administrative documents	Recommendation of one package amongst the three.
Delay for the editing and delivery of the card.	Three months test, in order to validate the choice and to provide the client with the time to learn the system.
Annual billing for the use of the card.	After three months, signature of the contract and start of the invoicing process.

It has been observed that the purchase of a credit card before and after the launching of the packages is very different. First, the packages are not launched because of explicit and formal expectations of the client. As a result, the bank must call the client and propose the new formula. Second, three options will be proposed, having their own tariffs and options according the kind of Credit Card that can be chosen. This choice is only possible when the entire account is analysed in order to understand which kind of option is required. To do so, a simulation will be offered by the information system in order to make a rational choice and to limit the costs of the offer. Then, and because the client must learn how to use the package, three month free trials will be offered. During this period, the client will be informed of what would have been charged. Then, the client must make a formal choice and sign a contract that will result in the beginning of the invoicing process.

In this case, contrary to the processes built in the retailing, the new interactions are characterised at a reduction of the level of divergence and an increase in the complexity. By building three kinds of packages for three kinds of client’s profile, the bank limits the divergence. This choice means that a customer, who has a given profile for the internal credit transfer and another profile for the consumption of a credit card, will have to select one package and to adapt its behaviour to the optimum for a given package. Compared with the previous situation, where each operation was achieved independently, this contributes to the

reduction in divergence in the processes. On the other hand, this design increases the complexity of the processes because, for each kind of service (the credit card, insurance, internal credit transfer, issuing of the checks, etc...) a given number of operations must be set for each package. Moreover, the overtaking cases must be forecasted. What happens if a client issued more checks than included in the package? The “What happens if” question is strongly linked to the diversity reduction when the “how should we do” is linked more to the complexity of the delivery process. And it is also linked to the information system, which ask for pre-definite answers. Finally, the monthly invoicing principle induces more stages in the sending of the documents, of the internal transfer of the money and of the correction of potential mistakes.

This comparison between the nature of the different developments highlighted that in the two cases, they both induced and were supported by organisational changes.

1.3.2. Embedness of offers and organisation in the interaction process.

Our observation revealed a link existing between the writing and implementation of the innovation and the organisation features to the point that the new processes transformed the structures in the two cases. The retailer case presents many clues of organisational change.

First, the work division between departments changed due to the different dispatches of the products. For example, the department managers previously in charge of the furniture, of the dish products, of the textile for the interiors, and of the domestic cleaning products had to leave their responsibilities to the new department manager in charge of the new department: interior, included in the “universe of the interior”. This entails the transfer of the decisions for the selection of the products, for their disposal, the choice of the promotion policy, the ordering process, and also the management of the employees in charge of the maintenance of the shelves. Producing such a task for an entirely new range of products requires integrating new individual competencies. As said by one department co-ordinator:

“....it takes at least three years for a new department manager to master its department. The first year is devoted to the observation of what happens during

the year and to the identification of the main commercial events. During this first stage, the department manager reproduces what has been achieved previously and learnt by making mistakes on an existing process and by learning to correct those errors. The second year is focused on the improvement of the tasks that remained weak performed during the first year. In this part, the department manager gains a lot of time by avoiding his initial mistakes. Thus, during the third year, he is in a situation to stand back and therefore to innovate...”.

This declaration, amongst others, revealed that the change of the assortment division entailed the acquisition of the new competencies required in order to support the process. This transferral of skills is achieved by a trial and error process, which results in the adaptation of the behaviours.

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Following from this change of competencies at the department levels, we can observed a change at the department co-ordinators levels. In the previous organisation there were three department co-ordinators, in charge of the management of the department managers: the “self-service non food products”, the “service non food products” and the “textile”. This structure changed due to the new assortment division. For example, the department co-ordinator of the “self-service non food products”, was in charge of the management of six departments (do-it-yourself, household products, culture, toys and sports, leisure-cars-fishing, gardening). The new assortment division led to the creation of new product families. As a result, the department co-ordinator had only four departments to manage after the change (see the figure 2): Electric appliance, Interiors, do-it-yourself and gardening. The removal from six to four departments in order to build homogeneous families increased the size of each department and the amount of work to produce.

In a logical way, the organisation of the purchase department changed also in order to be structured on the same basis. The previous structure appeared to be very similar from the store’s organisation. For each department fitted a purchase manager was put in charge of two main tasks. First, he had to collect the needs and expectations of the department manager in order to be able to select the appropriate products in quality and quantity. To do so he organised several times a year formal presentations of the potential products to the department managers. He also had informal contacts during the year in order to adapt its order to the sales.

Second the purchase manager is in charge of the negotiations with the suppliers. To achieve this task, he selected the suppliers, met the sales people and defined the conditions of the delivery with them. The co-ordination with the department managers implied an adaptation of the purchase department. If the structure of the department changed, then the structure of the purchase department must change similarly. And similarly, this removal induced a learning process for each purchasing manager who had to discover the needs of a new department, a group of new suppliers and the way to negotiate with them.

As a result, all the structures in charge of the management of the assortment have been deeply transformed due to the innovative project. It must be emphasised that this organisational change is strongly linked to the creation of a new offer. The removal of the offer wouldn't have been created without the organisational change. Because it generated learning costs, the organisational change has no sense if separated from the innovation. A similar statement is made for the bank case.

Such change didn't occur explicitly during the creation and launching of the new bank package. People in charge of the contacts with the client had to play this role before, during and after the innovation. Nevertheless some change in the head office organisation revealed that the job content was progressively changing throughout the innovative process. The beginning of the change was based on the general management's intuition that the sales people will have to reinforce their role if they want to succeed the launching. Until this development no operation required to meet all the clients and to convince and trained them. The local agency's directors with the use of the small and local budgets mainly managed the sales force. The function of the sales person was not very clearly defined separately from the rest of the local organisation. Most of them achieved also administrative tasks by being involved by the local agency every day's life. The first decision taken in order to change this situation was to give more power to the head of network manager, in charge of the sales force activity and results. A new director was hired for this purpose and the "network marketing" department was created in order to bring the means used by the sales people. At the same time, investments in the training of the sales person were budgeted. Finally, it was decided to remove the administrative person from the local agencies in order to reinforce the commercial orientation of the front line employees. In the case of the bank, the organisational change and the innovation in the service were not so closely linked as in the retailing case. Nevertheless,

the changes of interaction process with the client entailed reinforcing the commercial strength of the bank by specialising the front line people on the commercial tasks.

Those observations support the hypothesis of the increasing of complexity and reduction of divergence on the organisational structures we did previously. The increasing of complexity and divergence reduction entailed by the launching of the bank “package offers”, result in the reduction of the autonomy of the front line people. It also reduced the importance of having administrative people learning to solve local problems. If the administrative procedures are integrated into the information system for most of the options, no knowledge is required locally to provide the appropriate answer to the client. Thus it becomes possible to remove the administrative staff from the local agencies to the central head office. However, because the client’s behaviour remains partly uncertain, it remains necessary to learn from the interaction processes in order to reach the selling purposes. Therefore, the local learning remains necessary and requires keeping the sales people in the contact of the client in the local agencies.

Similarly, the retailer who does not transform the complexity and divergence of the processes radically decides minor changes, caused by the transformation of the job content rather than from structural changes. The implementation of the «universe» offer in each store represents a high level of divergence. As a result, only local people, having a good knowledge of the local context, could achieve the tasks properly. But this choice has been very costly in terms of time and money. Each store invested in the definition of the optimum offer by investing time and budget to analyse the consumer’s reactions, by doing simulation of the implementation of the shelves and by building managerial projects supporting the change.

Whatever the cases might be, the occurrence of learning is one of the similarities between the two developments. Both firms had to create something which did not exist and as a result to cope with uncertainty. They had to face a situation that can not be solved with the existing solutions. In this sense, both of them had to learn from the situations and the actions they implemented. Did they produce the expected results? Was it possible to reproduce them within the entire network? Were they accepted or rejected by the organisational members. The organisation’s members for each decision have constantly asked those questions amongst many others. The constant questioning on the validity of the interpretations of the situations

and actions seems to characterise the two processes. This leads to the conclusion that no innovation should occur without a learning process which aims at the reduction of the uncertainty. Whatever the final solution, what links the two innovations is the learning process which provided one of the basis for the decision making throughout the development. Thus what may be compared is not the final result. It is not the innovation in a sense of the chosen solutions. It is the innovating process that may provide the basis of comparisons, and that will finally support possible comparisons. The research on a past development led to the identification of the differences between the offers, results, procedures and sectors. However, the investigation on the ongoing process of innovation, research on innovating, led to the common means used by the teams in order to imagine, identify, select, develop, create and implement some solutions. Thus the research must adopt a temporal perspective based on the way the actors in situation invent the solutions. We intend now to develop this part of our research. —

1.3.3. Management of the development teams.

In both cases, we observed that the achievement of the development is reached by the development groups. The comparison of the two processes revealed that, far from being a simple decision, the management of the process relies on constant changes, either in the leader of the project or in the composition of the working group.

The creation of the banking packages required invoicing the client. Such a practise created a huge reaction in 1987 with as a consequence the ban of the project. The analysis of the past experience revealed that the opposition of the customer associations had been generated by the declaration of the federation of Brittany. Therefore, the co-ordination of the different federations of the Crédit Mutuel became one success factor for the general management. Then the principle of a manager in charge of the co-ordination between the different federations has been adopted. The charge of developing the commercial offer remains under the responsibility of each federation. Nevertheless, the main decision such as the launching date or the nature of the offer proposed to the client must be adopted on a common basis. This context influenced the choice of a project manager. The ideal candidate must be able to influence the decision of the other federations without being rejected by them. He must have a high position in the

system without being perceived as a thread by the managers of the different federations. The choice of the general manager of one of the small federations reflects this considerations.

Similarly, the implementation of the “universe concept” could raise strong oppositions within the stores by changing the responsibilities of the managers. Many candidates were able to lead the project, including the store manager, the purchasing manager and the communication manager. The choice of the purchasing manager offered many advantages. The other directors did not perceive him as a thread. Therefore the changes he could propose had more chance of being adopted. He was also perceived as being very competent for the non-food assortment. Finally his position away from the stores means that he could be more creative than the people in charge of the day to day management.

Those choices revealed that the nomination of a project manager required considering his competencies but also his position in the structure. Though the criteria themselves differed in the two cases due to the difference of the internal context, the choices were based on the same kind of reasoning. But the change of circumstances revealed that the perceptions of what constitutes the crucial factors may change throughout the development itself.

The case of banking revealed three stages, which successively occurred. In the first period, the identification of the consumer preferences was identified as being crucial for the success. In a second period, the writing of the procedures became very sensitive. The choices adopted then, directly induced the profitability, the duration of the computer programming and the kind of computerised interface the salesperson will have to use. The last stage was focused on the training of the sales department, on the way the product will be advertised and promoted, and finally on the kind of interaction the salespersons must establish with their clients. Such development required a large scope of competencies that none of the staff members actually entirely possessed. Thus, two project managers worked successively on the project on the regional scale. One of them, a marketer, was very competent on the consumer and on the distribution aspects of the project. The other, specialist in organisation, had previously achieved many developments involving the writing of the procedures and of computer programming.

Similarly the “universe project” presents many stages. The first one began officially in January

1994 with the creation of the first development group. This team was in charge of producing the first ideas of what could be the redesign of the entire non-food area of the store. The person in charge was the head of the non-food purchasing organisation as said previously. Then, after March 1995, the project required first implementations and tests. Due to the departure of the previous project manager for an opportunity abroad, a new working group was created in order to test the first implementations and to design the final offer. A store manager was chosen to manage this group. Finally, after many tests and formal definition of the project, the organisational part of the project remained to be decided. Thus, the second working group broke up in September 1996. A third group managed by the first person was in charge of the final implementation, including the organisational aspect of the project. The nomination of the first project manager for this part could easily be explained by his competencies and also by his position away from the store's organisation.

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This example illustrated that the choice of the development team, its leader and its team members, is strongly anchored in the local context (political, technical and human) and are therefore difficult to compare. Nevertheless, in the two cases, the choice relies strongly on the identification of the kind of problems which are expected to arise. The leader is chosen according to its competencies to solve the kind of problem which is due to happen. If those competencies are due to diverge, many project managers may be chosen.

More fundamentally, those examples revealed that the innovation process benefited from the contribution of the people having a marginal position in the organisation. Because their position leads to diverging representations of “what the offer could be”, their contribution ended in the design of a new offer. Nevertheless, their position appeared to be ambiguous. On the one hand, because they have a diverging perception of things, they are able to renew the frame of thinking of the organisation. But on the other hand, and because the first ideas appeared as being fragile, the testing requires a strong support from the existing structure. The management of the development project relies on the solution of this complex equation. Too much divergence will result in the rejection of the ideas. Too much convergence produces conformity rather than innovation. This management constitutes the design of the offer.

In both projects it must be noticed that the teams are constantly changing. None of the members has been directly involved in the entire process, from its very beginning to the

launching. Even the project managers changed along the different stages. The retailer case illustrated this permanent transformation of the team in charge of the successive stages. The initiator of the project, who became the project champion in a first stage, changed after one year due to a change of function in the same organisation. Then the second project manager changed after another year of tests, due to the return of the previous manager. Similarly, the development team moved constantly during the process. After having achieved a first stage of the process that resulted in a first promotional test of the concept, the initial team changed. People in charge of the implementation in the stores pursued the project. Then, by their integration in the development group, the people in charge of the communication created the first promotional leaflet based on the concept of the “universe of interior”. Then another group worked on the simulation of the new organisation required by the concept. Those changes lasted until the last stage, the launching in each store, where this time another team took the implementation project under their wing.

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A similar statement is realised in the bank. During the initial part of the development, two working groups had been created. A confederate marketer managed the first one in charge of the design of the national offer. The second working group was in charge of the writing of the procedures and of the analysis of the prices and budget dimensions. After one year, it was stated that each of the groups did similar tasks. The main reason of that duplication of tasks was that in order to take a decision on the offer, the development group must measure its financial involvement. Similarly, in order to produce a financial balance, the other group must have a clear idea of the offer’s content. As a result, it was decided to melt the two groups into only one and to reduce the numbers of its participant.

However, in some cases the momentary exclusion of the project is tacitly adopted. The example of the computer department clearly illustrated this point. Many participants said that the inclusion of the computer department at the very beginning could lead to the freeze of the service specifications too early. Because the programming is very time consuming, but also because the change of a program already done produces poor results, it was adopted to integrate the computer department very late in the development. Doing so would lead to the adoption of a finalised program that could integrate the constraints of each department after each of them contributed to their own knowledge in the development. But at the same time, the delayed integration of the computer department in the process should also limit their

power on the decisions:

“ When the computer department is integrated too early, the bank <in the sense of the other department of the structure> becomes dependent on this department. This means that the bank will not be in the position to design the commercial offer. The computer department gets the upper hand. It is our case but I think that it is true in the other banks. It may be because the staff in this department is very well skilled. But also because the bank <the other departments> is also very slow. Because they have multiple projects underway, the computer department is under the constraint of time. If the bank does not provide an answer very fast, then the risk for the computer department is to miss the other deadlines. Then they provide their own solution and they go ahead.”.

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To avoid the potential bad decisions due to the pressure of time, the development team developed two kinds of know-how. First they used to associate the computer department in the last part of the project by giving to them a final issue of the specifications. This let more time to test the initial propositions of the “bank part” and to integrate all the comments and reactions in the final decisions. Second, the development team integrated people being used to work with the computing department. This provides the opportunity to anticipate some of their objections. But the inter-personal relationships facilitate also the use of an informal questioning which contributed to the integration of the computing department’s constraints in the project.

Concerning of the required competencies, it must be said also that those constant changes are due to the interest of the actors themselves. In the case of retailing, the integration of the communication managers was triggered by their interest in the change of the advertisement’s principles previously adopted. The “universe concept” provided unique opportunities to create more attractive documents by associating complementary products. This change made the design of appealing thematic picture on the interiors possible, the fashion, and the culture. As a result, the qualitative perception of the promotion department was due to progress. Similarly, the creation of a new campaign provided the project manager with a unique opportunity to materialise his concept. The existence of the concept, which arose long before the human organisation had changed, provided the opportunity for all the actors to understand

what could bring the concept. Moreover, it provided a good way to lead the management of the stores to implement such kind of organisation in their sales area. Then, the integration of the communication managers into the project benefited both the promotion department and the project manager.

A similar statement is realised in the bank project. The first designs of the packages rely on the qualitative interviews of thirty clients. As this first survey had been carried out the confederation, the regional marketing department proposed to confirm this first trial by an extensive and quantitative market survey. To do so required hiring a specialist. This was done by the integration of a doctoral student. In this way, the regional marketing department acquired the way to influence the decisions at the national level by acquiring know-how about consumer reactions. This choice results in the creation of three packages rather than two as initially forecasted. In this case, the marketing department was involved in the development group by the will of its members.

Finally must be considered that the borders of the development team moved according to three main reasons. The first one, which seems to be most important, is linked to the nature of the tasks that must be produced. If one set of competencies is required, then new internal or external specialists are integrated in the group in order to achieve one specific task. This suggests that the project team identified the people able to solve the problems encountered right through the innovation and integrated them into the process. The second reason is linked to management of the project itself. We included in this case all the changes due to direct or indirect managerial reasons. For example, the realisation of tests in one store requires including the store manager and many department managers in the project. The third kind of reason is linked to the involvement of the actors in the project. This interest may be defined through the interest perceived by the individual in the active participation in the project. We listed the reasons of the integration of new members in the group and the reasons of the time chosen for their integration. The results are summarised in the figure n°34.

Figure n°34: Reasons for Change in the Composition of the Development Team

Changes in the Development Groups	Examples in the Retailing	Examples in the Bank
Competencies	<ul style="list-style-type: none">-Integration of people due to their specific skills.-Creation of multiple development teams per store.-Integration of external actors used for their specific skills.-Integration of consultants in the development projects.	<ul style="list-style-type: none">-Integration of people due to their specific skills.-Delayed integration due to their experience or function.-Integration of external actors, due to their specific skills.-Integration of external actors due to their production capability (supplier in computer development)
Reasons due to the Management of the project — —	<ul style="list-style-type: none">-Change of Project Manager due to change of function in the structure.-Realisation of test in the stores.	<ul style="list-style-type: none">-Occurrence of learning after having experienced one organisation.-Change of the organisation which have impact on the functions of some of the development team.
Reasons due to the involvement of the actors.	<ul style="list-style-type: none">-Integration of the communication manager-Creation of local implementation teams.-Involvement throughout the project of stores and department managers.-Selection of the people according to their interest in the project-Selection of the people according to their contribution due to their level in the hierarchy.	<ul style="list-style-type: none">-Designation of the Project Manager-Hiring a market research specialist.-Involvement of the distribution network managers.-Tests realised at the sales force levels

Then, rather than having a unique and well defined team, one must consider a changing team, made of people hired for their competencies or potential contribution, but also according to their interests in the adoption of one option rather than another one. In such changing contexts, it is noticed that only the actor's willingness contributed to the lasting of the development. In the two cases, only the project that could benefit some of the actors of the organisation had the chance to survive and to progress. The success is therefore linked to the

potential contribution of the project for the organisational members. Rather than relying on some abstract motive, the progress of the development project is strongly linked to the interest of the individual and groups of the organisation. That successive involvement of the actors in the groups according to the benefit they can find in the final result contributed to a very progressive process. It is because the staff members could find a potential benefit to the final offer that they bring their expertise, competencies and skills. The advance is due to the project but to one of the staff members who founded their own interest in the creation of a new solution.

The composition of the team revealed surprising observations, contradicting most of the theories about innovation projects. Rather than having a project led by a well trained and motivated product champion, it may be observed that the development is achieved by formal groups who changed right through the process according unexpected problems encountered, to the required competencies and to the interest of the individuals themselves. Those changes may appear surprising in an Ex-Post perspective. However, they are easy to understand in the perspective of an ongoing project. When the next encountered problems are not already known, when the uncertainty about the issues of the actual stage is great, when the next stages are impossible to define accurately, then it is interesting to adopt a flexible organisation. The constant removal of the development group's borders provided the opportunity to increase the available competencies and skills.

The involvement of the team members according to their competencies has been strongly influenced and adapted according to the criteria of complexity and divergence of the interaction processes.

1.3.4. Involvement of the complexity and divergence for learning.

Our observation leads to the statement that during the development process, different choices of divergence and complexity may be adopted. Given those two choices, learning will occur by different ways. The reduction of the divergence of the processes leads to centralised learning. The reduction of the divergence means that all the cases are covered by the initial design and that the entire interaction sequences are predefined and constrained. The actors of

the process have only to learn their role in each sequence. The learning of the sequences required to perform the entire process, whatever the level of the organisation might be concerned, is only possible for actors being positioned at the centre of the organisation. The learning process in this case means that the project managers must learn from each of the organisational actors and to adapt the processes according to the statements. The learning process must be achieved through the collection of the individual know-how applied in the project and to their transcription into standardised set of procedures. The results, in our case the writing of each program of the information system, lead to the centralisation of learning.

Similarly, the design of processes increasing the divergence will lead to decentralisation of learning. The increasing of the divergence means that during the process, new events may alter its forecasted course and will transform it in unexpected ways. This means that the centralised procedures will be inefficient in many cases. Whereas the ability to solve the encountered problems will rely on the actors in charge of the interaction with the client. The learning will result from this local experience and must remain at this level in order to provide an efficient response. Due to the variety of the contexts, a centralised learning may not cover all the cases and will lead to inefficient answers. In our case, the delivery of products is achieved through a very large set of behaviours. Moreover, the local contexts, such as the size and disposal of the store, will influence those processes. As a result, a centralised learning remains difficult. Thus, the local learning will be difficult to transfer from one store to another.

The increasing of complexity results gives the same effect. By complexity, one refers to the number of stages of the process, the number of the actors contributing to its achievement and the sophistication of each stage. As the design of each stage of the process induce tests and validation, a greater complexity, by multiplying the stages, will enhance the learning needs. Then many factors will lead to the centralisation of learning about complex processes. First, as learning is costly in terms of time and budget, the multiplication of local learning on complex processes could lead to overtaking the development means. Second, due to this complexity, the development will require specific know-how, not necessarily available at a local level. Third, as the local level is not in the situation to co-ordinate the action of the multiple actors of the organisation, it will remain difficult to learn from the problems arising due to the co-ordination of the actors.

Not surprisingly, as the innovation for the bank increased the complexity of the service, we observed that the head office's members achieved the learning process, even when the tests must include sales persons. As said by the project manager of the bank:

“I made some interviews of customers last week. I needed to meet them in order to know exactly how they could react to our offer. Previously, I heard so frequently the sales force telling that the customer will refuse or cancel their accounts. And I have been so surprised to observe the opposite reaction. I cannot say they were enthusiastic in the perspective of paying packages. But they found them interesting. I met a client that had an immediate debit card. She was interested in a delayed debit card but no one had spoken to her from this service before. The package has been the opportunity to sell it to her as a new service.”

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In this case, the experience of the project manager was reintegrated into the definition of the offer's content. Similarly, the testing of the offer was achieved centrally. A specialist in the market survey designed the research investigations and methodology. Then the sales person was told the role they had to play during the interaction. The statements of this experience were centrally analysed by the specialist who published its conclusions to the project manager.

The comparison with the retailing situation underlined that in the case of low complexity, the learning process was realised by the stores which implemented the first design and tested them locally. The first trials were implemented in one store with its active participation. The observations have been made at the local level. In this case, the transfer of knowledge was realised by the integration of the local team members within the national development group. Decentralised processes of learning entail the removal of the individual who acquired the knowledge locally.

Those statements underlined the links existing between the nature of the processes delivered and the organisational features. The efficient delivery of divergent processes requires an organisation which support the “local learning” realised by the front line people in charge of the interactions with the client. Thus, autonomous individuals and departments having a strong commitment in the creation of their own performance will produce good results. In this

case, the innovations are created locally. The example of the retail illustrated this point. Once the global project of the “universe” has been fully developed, it has been recognised that its implementation in all the stores requires strong adaptation. Due to the difference in terms of size and of the implementation of each store, each local team had to create its own implementation of the “universe” in the store. The consequence of this adaptation has been a very heterogeneous set of final results where none of the implementation may be considered as fully comparable.

On the contrary, the standardised and complex processes entail a learning process realised by a centralised development team. Therefore, the organisation that will provide the opportunity to facilitate the contacts and communication between the development team and the other departments should support the learning. Because the learning will result in the creation of new standardised sequences, the creation of new knowledge will be transferred to the rest of the organisation through the use of training programs and communication campaigns. In this case, the innovation is created centrally and diffused without adaptations. This requires an organisational design, which supports this way of working.

To conclude on the study of the links existing between the divergence and complexity of the processes and the nature of the learning process, it may be concluded that the creation of a new service, which changes either the complexity or the divergence dimension, should lead to organisational change. Because the adoption of a great divergence in the processes requires local learning and thus decentralised structures, the centralised organisation should have to be transformed in order to produce the appropriate answer. Similarly, the reduction of the divergence and the increasing of the complexity should result in the centralisation of the organisation. We summarised those observations by the following figure n°35.

Figure n°35: Influence of the complexity and divergence on the O.L.

Complexity		
	Low	High
Divergence		
Low	<ul style="list-style-type: none">➤ Learning is achieved centrally by the functional managers➤ Implementation in the network is achieved by the use of explicit rules and procedures➤ The innovative offer remains homogeneous	<ul style="list-style-type: none">➤ Learning is achieved centrally by the functional managers➤ Implementation requires an important learning at the local level.➤ However, the innovative offer remains homogeneous.
High	<ul style="list-style-type: none">➤ Learning realised at the local level by the operation managers➤ Impossible to establish synergies at the central level.➤ The innovative offer remains heterogeneous	<ul style="list-style-type: none">➤ Potential conflicts between the necessity to adapt and learn locally and the building of complex process requiring centralised means.➤ Potential conflicts between heterogeneous behaviours and homogeneous offers.

Those assumptions resulting from the empirical observations established a clear link between the learning while innovating and the organisation. This is reinforced by the observation of the impact of the innovation on the organisation.

Those statements emphasised the critical role of the individual competencies and skills in the project. They do not provide satisfactory explanations about the way the development group produce the final offers. The close study of the development group’s functioning revealed that its main contributions are achieved through sensemaking and learning processes.

1.3.5. Comparisons of the two processes: summary of the findings

The findings are summarised in the following table n°36. **The overall broad conclusions of the analysis on what has changed is that, except for the learning processes, it is mainly impossible to compare one development to another one for multiple reasons. One of**

them is, of course, the characteristic of newness. More important appeared to be the impact of the external and internal context. The development process is strongly anchored in the existing feature of an organisation and therefore, impossible to reproduce to another organisation. Given those differences, the only statement that applied to both organisations is that the development process is achieved through learning stages. This invalidates very clearly the recommendation for predefined development models where each stage is clearly indicated and positioned in a given sequence. This leads the research to focus on the learning processes that occurred all along the development process.

Figure n°36: Overall conclusions resulting from the comparison of the two development processes.

Chapters	Broad Conclusions
1.3.1	Two development processes are not comparable in terms of outputs, stages of the development, means used to achieve development and organisations. However, two points are common to the two cases: <ul style="list-style-type: none"> - The development is achieved by learning - The two organisational features has been transformed by the development.
1.3.2	As the interaction process client/organisation has been transformed by the new offers, the development resulted in the change of the part of the organisation that either delivers or supports them.
1.3.3	The development is achieved by a flexible team that changed all along the process according to the competencies required to solve encountered problems. The portfolio of available competencies and skills and the way they are associated to the development impacted on the speed and performance of the design.
1.3.4	The complexity and divergence of the interaction process impacted on the development process by inducing new learning stages at different levels of the organisations.

2. THE ORGANISATIONAL SENSEMAKING AND LEARNING PROCESS DURING THE DEVELOPMENT OF THE NEW SERVICES.

The adoption of the actor's perspective on innovation transformed the vision generally developed on the process of innovation. In the literature, the entire course of the development is said to be managed through different stages (Cooper, 1994). Our observations are that this view resulted more from an ex-post rationalisation than from reality. Having a view of the entire result of the change and of its effects appears to be very different from being immersed in a flow of ongoing events and of ambiguous data. Because the actors must deal with the uncertainty of multiple choices, because their own purposes are to build a new process step by step but without any general framework in mind, the building of an innovative service appeared to be more like an emergent venture than a well planned journey. In order to describe this process we intend to analyse the main characteristics of the development process itself. Then we will analyse each of the main stages we observed.

The first investigations led us to identify the main actions, which have been produced by the two firms. To do so we interviewed most of the actors involved in the development. We asked them to describe the process as they perceived it. We triangulated this information by comparing the interviews with the internal written reports and with the other interviews. The result is summarised in the annexes 4A and 4B. A short comparison of the main stages of the process revealed that the standardised journey described some research on innovation is more chaotic and improvised than it is generally admitted in most of the research papers. The observed succession of sequences could not relate in itself from a rational planning of the development. The analysis of the nature, number and content of each development stages revealed more differences than similarities. One major statement emerges from the comparative analysis of the two processes.

This assumption is linked to the adoption of the actor's perspective on the project. "Innovating" appears to be very distinct from telling stories on "innovation". This leads to major confusions about the innovation theories. When the adoption of an Ex-Post perspective revealed a formal process, the exam of the actor's point of view revealed a more confusing image of the process. The interviews revealed that the major problem the people have to deal

with is the uncertainty of the decisions they have to take. *“Innovating” means making choices despite that the final result is unknown.* “Innovating” means building something that has never been done by the organisation. The major problem of the actors of the innovation is not the achievement of a formal process, which may be justified Ex-Post by a final result. Their major problem is to cope with the indeterminateness, the doubts and the equivocality. The adoption of the “innovating” perspective transforms the traditional approach of “innovation”, which focuses on the output.

This change of perspective should lead to the redefinition of the problem of service innovation. The question is no longer to understand what has been done previously. It is not the study of the past that could help for the “innovating” venture. The problem that must be investigated is *“how is it possible to choice an alternative when the consequences of this choice does_not already exist”*. This problem is the most uncomfortable our respondents had to cope with all along the process. It is also very uncomfortable for researchers who are used to investigating rationality rather than indeterminateness. However, this way of considering the innovation may be more realistic than the adoption of an Ex-Post perspective. This way of thinking innovation could relate from the relative unpredictability of the innovative process. It can relate for example from the uselessness of the previous experiences realised by the other firms. It also explains why the predictions about the output of innovation are impossible to do at the beginning of the process until its very end. But on the other hand, the understanding of the way the actors behave in such a situation may reveal more insights about the “innovating” process.

Moreover, the observations revealed that, far from taking random decisions, the actors gave answers to this situation. Though the problem of having to choose alternative with no ideas about the consequences remains central throughout the “innovating” process, the actors adopted two broad strategies that are mainly unconscious. By doing so they contributed to the reduction of the “uncertainty”. Those two strategies are the sensemaking and the learning processes.

2.1. NEW SERVICE DEVELOPMENT AS A SENSEMAKING PROCESS.

Considering the beginning of the development process is not an easy task. Most of the time, the start of the development process is said to be settled with a first formal screening of the first ideas. For example, Cooper (1994)²⁶⁴ contributed to the idea that one success factor relies on the generation of ideas and on their initial screening. This approach entails the existence of people having the purpose, time and budget devoted to the new ideas generation. The contrary to this kind of deterministic approach to innovation, our observations revealed that the birth of the two projects are strongly anchored in the interpretation processes.

2.1.1. The individual interpretation process

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The beginning of the retailing project supports this point. Many different actions had been produced before the formal creation of the working group. First, many promotional leaflets tried to mix products regardless of their belonging to a department. This disposal brought an answer to the promotion department's concern. It constituted one efficient means of improving the visual quality of the pictures. The adoption of a better design gave some first and informal experience of the interest to mix the products in a different manner. During this period, approximately estimated between 1990 and 1994 by the participants, those publications didn't change anything in the organisation of the human structure of the stores.

During the same period, as the stores remained autonomous, many experiments of new implementations occurred. Most often, the store's management used the opportunity of the shelf's refurbishing to transform the implementations. This resulted in significant changes in the turnover and client satisfaction of the different departments. In all the cases those experiments were realised at the local scale.

This situation changed when the non-food competitors implemented new outlets and gained market share in hypermarkets again. Then the head of the purchase organisation, in charge of the non-food products began to find new solutions to solve those worrying results. His

²⁶⁴ COOPER, R.G., (1994), *Winning At New Products*, Addison Wesley Publishing Ed.

meeting with a consultant in 1993 provided the beginning of a solution. The consultant advocates for the redesign of the non-food part of the store, launching the idea that it should be structured around broad themes such as the leisure-culture (book, records, video, Hi Fi, etc...). This consultant produced the first conceptualisations. He also began to simulate the hypothesis that a store organised around three broad categories was possible by analysing the potential balance in turnover and human structure of three large categories of products. At this time, the idea to change the entire human structure was not clearly evoked.

As the conclusion was positive, a first “light” test was implemented. This was a promotional leaflet, regularly published each year. The newness in this case consisted in the adoption of new classifications of the products according to their belonging to a category of client’s purpose. It materialised the categories given by the consultant and launched the word “universe” to mention each category. As it succeeded, the decision to extend those first trials was taken and a first working group was created.

This means that, in this case, a clearly identified project resulted in three events. The change in the competitor’s profile created an unexpected and stressful result. Previous and positive experiments appeared to be a potential solution. A consultant had the intuition that the change of implementation could modify those results. The communication department formalised and transformed the first intuitions into a solid catalogue that materialised them. When the innovation project was decided, two years had been spent on the informal conversations, on the collection of local and positive experience, on the identification of the mutual benefits, which could result from a project amongst many other tasks. It is far from being the well planned and organised process often described after the launching.

Similarly, the birth of the financial product was anchored in the informal discussions occurring before and during the presentation of a general survey on the impact of the Euro Currency in 1997. The perceived threads of potential new entrants on the French market pushed the management of the CM’s federations (Crédit Mutuel) to accumulate data. Many internal reports, surveys, conference regrouping many staff, general management, experts and consultants, provided multiple interpretations of the impact of Euro introduction. In such a stage, which is not identified as a stage in itself by the participant, the actors are trying to give a meaning to the flow of events:

“It is a jigsaw which is made of the arrival of the Euro currency, of the expectations of the arrival of new competitors, of our needs to recover profitability and of the potential of some propositions for our future. What triggers the development in this case should be some kind of collective conscious.”.

One cannot speak of a project in itself. What is about is the constant flow of analysis and interpretations produced by the individual during the achievement of their tasks. Due to the constant changes of their environments, the people are trying to assess the potential opportunities and threads of the situations. This constant activity may be considered as an ongoing task which mixes internal and external concerns but also individual and organisational elements. The interviews revealed that each person, whatever its position might be, evaluated the context and interpreted the situation by given a specific sense to each piece of information:

“We are starting this project without any framework, apart from a sentence taken from a speech of our president, or some declaration read in the press or even an informal conversation. One writes this on a report and on this base, one begin a work of collection of information and data which is structured in order to emphasise the strategic stake of those themes. This initial work provides a first frame to what may be transformed into a project”.

In both cases, the most surprising aspects of this sensemaking process is the systematic interpretation of the environment and of the customer expectations and reactions. For example, all the interviewees referred to the customer expectations in order to justify either their opinion on a decision or the decision itself. We extracted these sentences among many others:

“In December, they adopted a very systematic definition of the packages. It was too rigid. The risk was the rejection by the clients”; “The coffee filters, as far as I remember, the clients asked themselves why they where not implemented near the coffee packs”; “There is always one manager who will assert that his clients are used to seeing one product near another one. Therefore he does not want to see good

reasons for any change". "Our clients do not want alibi products. They want something flexible and light. They do not want it included in the package because they know that in this case it will increase the bill. They do not want to pay for something they will not use".

Those interpretations remain individual and therefore very subjective. In the example of the last sentences, further surveys demonstrated that the great majority of the clients do not even know the exact price they have to pay each year for the use of their credit card. Some of them did not know exactly the exact nature and use of some of the options that were included in the offers. We recorded those interpretations throughout our interviews. They appeared to be the output of a constant process, resulting from the individual activity. In order to face a complex situation, the individuals extracted some information from their own experience, built a rational discourse on it and behaved according to this interpretation of the facts. The interpretation process transformed an ambiguous data into a signal that says something about a more global truth. Because it is asserted that the consumer would not pay for a useless service, one must exclude many services from the packages. This constitutes what we called the constant flow of interpretations of the situation, where each individual reacts to the events he perceived as a signal resulting from its own interpretation. Nevertheless, in the context of the organisations, the sole individual interpretations are of weak interest in order to achieve a collective action.

2.1.2. Testing the interpretations through informal conversations and tests.

This means that very fast, the initial interpretations are to be transferred at the group level. Because the interpretation process appeared to be deeply anchored in the individual experience, each individual will interpret a similar situation in a different way due to his position in the structure or to the diversity of the situations.

In the retailing sector, the local experiments provided the basis of the building of new interpretations. Multiple local experiments within one store resulted in the building of new inferences:

“When we expanded the store, our director decided to push the culture department. The surveys revealed that white-collar clients made frequent visits in our store. They had lunch and then walked around the store and bought culture products. We increased the quality of the assortment and then as result increased the turnover”.

At this period, the word “culture department” didn’t exist (this interview occurred after the beginning of the “Universe” project). Two independent departments were formally defined: the books and the records. The creation of a new entity, called culture department, illustrates the way new representations may first result from the interpretation anchored in the local situations. It must be noticed that this is the store manager who led this first experiment who initiated the first development group.

The analysis of the perceptions of the promotion manager and of the Purchasing manager revealed how interpretations may differ and converge. At the beginning of the innovation, the competitive environment is strongly influenced by the increasing of the Category Killers. Those stores are specialised in a short range of non-food products where they are more attractive than the generalist hypermarket. The non-food purchase manager interpreted this information as a threat. The documents delivered at this period to the stores managers mentioned explicitly this increase of the competitor as a justification of the decrease in the non-food turnover. The purchase manager proposed to reorganise the non-food part of the store. By creating broad “universe” of consumption, it would be possible to overcome the strength of the competitors.

However, this choice corresponds also to political choices. At this period, each department manager selected and ordered his own range of products and stacked them on the shelves. This excluded the central purchase manager from the ordering process. His role was limited to the selection of the collection of products. Then he had to display them to the department managers who created their own range of assortment. Given this place, the negotiation was difficult for the central purchase manager, who could not achieve economies of scale. These also results in a very heterogeneous offer, based on the individual intuitions of the department manager.

The department managers had convergent and divergent interpretations. A convergent

statement is made on the increase of the competitors. The arrival of the new stores, often in the same commercial area, threatened the turnover. This required a reaction:

“Until now, the specialised retailers have taken our initial competitive advantages and have developed them to the point that they overcome our performances.....we stated also that those competitors used the consumer to purchase differently. When we used them to make their entire purchase under the same roof, our competitors trained them to buy differently, by categories of products. With the concept of the ‘universe’, it was possible to regroup products according to those categories...As a result we observed that the client who came for a given product may buy another one which completed the first purchase.”.

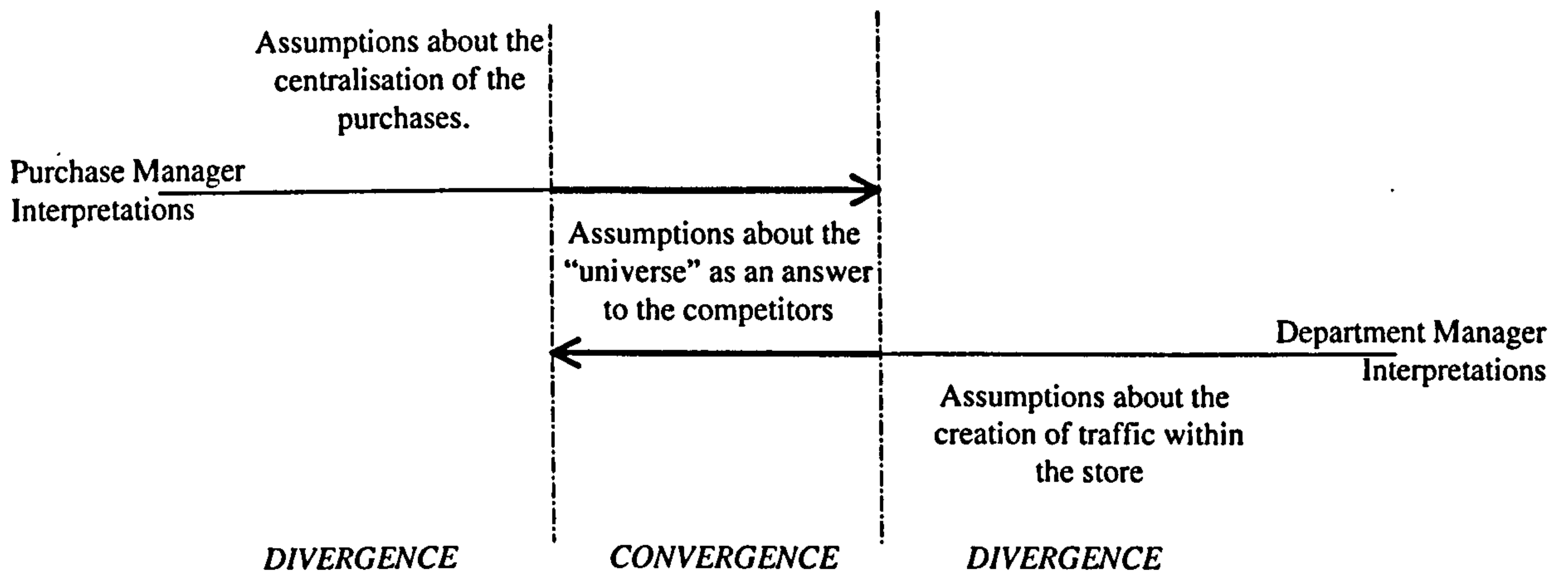
Nevertheless, to this statement the department managers added that the organisation adopted before the change was efficient and may contradict the choice of the universe. For example, the disposal of a category of product within the store was done according to the creation of traffic in the sales area. The department managers put the products that were essential to the consumer in the distant part of the store. Given the size of the stores, this provided an efficient means to developing the impulsive purchase.

Moreover, the department managers came to the conclusion very early that the implementation of the universes will change the structure of the organisation:

“By small steps, considering what should be changed in order to implement the “universes”, we came to the conclusion that we will be obliged to renounce 20 to 25 years of assortment’s structure. Those structures have been based on the structures of suppliers but not on the customer’s point of view.”.

We tried to materialise the divergence and convergence in the individual interpretation as follows in figure n°37.

Figure n°37: Convergence and divergence in the interpretation process.



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This example underlined that the sole individual interpretation is not sufficient to integrate the whole complexity of the environment, of the internal context, of the multiple tasks performed by each actor of the organisation. This means also that, in the context of the organisations, the interpretation process is strongly anchored in the position of the individuals in the structures. As a consequence, each time a problem is encountered, the production of the interpretation results in partially diverging and partially converging interpretations. Though they are described by the actors as actual and testified assertions, very few of them have been rigorously tested. The other organisation's members may question each of them. This confrontation process could contribute to the enrichment of the initial representations. However, it may be concluded from this study that the interpretation process in organisation is a negotiation of sense. If the negotiation or confrontations of the interpretations lead to common assertions about the encountered problem, then common actions may ensue. However, when the negotiation is impossible, or when it does not result in any convergence, then only individual actions are possible.

To reinforce the statements about the individual interpretations, we used the material collected during the participation at the meetings of the working group in charge of the innovation for Cora. Because this group was created during the period we observed the « universe project », it was possible to attend extensively all the meetings as a full member of the group. This

group was composed of 16 persons, from all the parts of the organisation: departmental managers, purchasing managers, account managers and warehouse managers. The general management was not included or represented in this group. None of them knew the others previously. Being integrated into this group as a full member provided an outstanding opportunity to observe « innovating » rather than innovation. We took notes about the content and the structure of the verbal exchange in order to look for patterns of conversations. We crossed those observations with the written reports of the meetings that described the final decisions adopted during the meeting. The first meeting confirmed the importance of the cognitive conflicts, their link with the interpretation process and the divergence of the interpretations resulting from the individual experience.

The first meeting progressed as follows. The manager in charge of the group announced that the general management has created this group in order to produce more innovations for the stores. Then he developed some definitions of the innovations. Then an academic made a presentation on what innovation is. Then the manager began to ask for “ what could/must be the purpose, mission and goals of such a group ”. Previous interviews revealed that the manager in charge of the working group obtained no answer about this question from the general management and, as a consequence, intended to use the group in order to progress on this point.

The first conversations appeared to be surrealistic. Each participant tried to give their own definition of innovation. Then multiple ideas were developed according to each participant's experience. Because such a flow of ideas was impossible to organise, the participants asked for more defined purpose and goals. The manager said that the group had to build its own purposes and goals. As a consequence, people tried to define the role of the working group separately from the one of the stores. Some of them thought that innovation must remain in the store's attributions as an answer to their own problems. Others stated that the good ideas invented in one place are not necessarily transferred to the other stores. Another group underlined the point that some innovation can not be created by a single store due to the level of means required. Many people raised the problem of the nature of the innovation that must be adopted. Was it limited to the stores and to what the client may perceive? Or was it important to extend the thinking to the organisation, to the management of the people and to the internal communication? Another question raised the problem of the relations with the

other groups, such as the purchase department, the store's management and the computer department. Could this working group impose new ideas or not? One of the most striking points was the overall cold and unfriendly atmosphere. People didn't know each other before the meeting. They declared after the meeting that they felt uncomfortable and that the confused aspect of the discussions disturbed them.

So many questions and problems provided no solutions and as result, the manager of the group appeared to be very disturbed by the way the meeting developed. No purposes or goals seemed to appear. No conclusions emerged in answer to the initial questions. The first tasks to perform were not clear. The question "what could the purpose of such a group be" remains ambiguous. This illustrates that a simple event such as the launching of a development group may be interpreted very differently by the participants which it may lead to no common conclusion. The logic of its creation is not a fact in this case. As a result, each participant proposed their own interpretation of what should be done. The divergence of the fifteen opinions resulted in a chaotic conclusion. No sense emerged from this first meeting and the interpretation remained open. It is difficult to conclude from such observations, which occurred repeatedly throughout the meetings of the working groups that the individual created answers anchored by their own intuitions and experience. Only two statements can be made.

First, each time a new event occurs, people feel uncomfortable. As a consequence they systematically tried to transform this feeling by producing an interpretation frame, which explains the occurrence of the event. Such a strategy aims at the reduction of the newness of the event. By providing an explanation: "this group has been created for..." they tried to establish a link with the event <the creation of the group in this case> and an overall purpose such as a strategic intent or the efficiency of the organisation. Second, when they are faced with such a "strange event", the individuals produced interpretations which diverge. In this very specific context where the social links were very weak, the hypothetical causal links developed by each individual differed from the other. A group made of individuals revealed more diversity than coherence in the way a problem must be treated. As a result, the final image of the event is more diverse, debated and rich than the one provided by only one individual. This led us to conclude that the divergence of the interpretations and, as consequence, to conclude that the active contribution of the production of interpretations for the innovative process. However, the building of common actions and decisions also requires

sharing a common sense about the things that must be done.

In the context of a group, the decision to launch a project could not be taken individually. It must result from the interest of many of the actors. In the case of retailing, the analysis of the development process demonstrated that many reasons pushed to actors to a common conclusion. First, the purchase manager interpreted the « Universe » as a good way to achieve better results. Second, the consultant was able to develop thinking and recommendation on this topic. Third, many stores managers were keen on the transformation of their stores in order to embellish the non-food part of the store. Fourth, the communication department found in the « universe » idea a good response to their problems. This was not been done instantly. But progressively, the interpretations converge partially because the actors found an individual and specific interest in the building of a common solution.

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The observations revealed that the test of intuition is achieved through informal conversations held in the personal network of the individual. The test is realised through the questioning of well-known colleagues about their reactions to the development of one proposal. As one general manager of the bank to relate from the interactions said:

“Each time the development group had interactions with the members of the organisation, it had to integrate the objections and remarks that were made. It had to integrate the remarks on the distribution network in January. The group had also to integrate the remarks on the advantages offered to the client in April. This is actually a really interactive process.....One of the members of the group, in charge of the co-ordination between the different federations, is very sensitive to the political aspects of the development. He is not very used to integrate the customer reactions. At the opposite the managers of the network are very involved in the integration of the customer aspects of the offer”.

These first tests are realised in this way because, as they do not represent any risk for the individual due to their relationship, it is possible to be more creative and “divergent” compared to the organisational standards. The use of such “short” tests is that the cost of the invalidation of the first proposal is very low, either in terms of money or in terms of time and of personal position.

Moreover, the sharing of the initial idea results in the creation of an informal network made of the people sharing the same concern. In the two cases, it results in a small group of people sharing the same perception of the existence of the problems that the organisation must solve. The importance of this network and the position of each of its members will strongly affect the recognition of the problem within the organisation. This suggests that the position of the individuals concerned by the encountered problem could play a great influence in the creation of the development group.

2.1.3. Selecting among the flow of interpretations.

The sole building of new interpretations and representations is not sufficient in itself to induce the creation of a formal project as we previously developed. The local situations, contexts and problems lead individuals to build new representations of reality in order to solve the problems they encountered during the ongoing tasks they have to produce. The arising of failures, pitfalls and non-expected results lead the individuals involved in the conception of new solutions. Most of them remain at the individual level. Their transformation into a formal project required that the general management could identify their interest according to their strategic intent. This means that the birth of the project is acquired when the creation of an innovative solution, tested at the individual level, is expected to bring an answer to a strategic purpose.

Consequently, the middle management is in the best position to analyse the possible fit between the two. On one hand they are very near to the operations. Therefore they can observe the problems encountered and also contribute to the solutions implemented. On the other hand, they are not too distanced from the general management. Thus, they are able to devote some time to integrating the consequences of the strategic intent for their own activity. Thus the middle management is in a privileged place to turn the strategic intent into operational actions. Each time a solution invented at the local level could fit the strategic intent, an opportunity to contribute is given to the middle management.

In the case of the retailer, the people who contributed to the birth of the projects were the head

of the non-food department of the purchasing organisation, the manager in charge of communication, and two store managers. None of those managers was in the situation to decide on the creation of a development group. But they were at the interface between the pure operational problems and the strategic levels. In the case of the bank, as the decision involved all the federations, the people who contributed to the initiation of the process were the functional managers in charge of the actions shared by the different federations. In the two cases, those people have enough power to refer to the higher committee, which was in the position to take the decision. Furthermore, they have enough power and communication skills to share their own representations with a large number of actors.

2.1.4. Creating a network of people supporting the potential project.

The testing of the intuitions relies on the co-operation of many actors. The testing of a new place given to the books and record departments required the participation of the internal and external actors. Internally, this change depended on the department managers who will define the assortment and the price policy, and on the employees who will remove the shelves. Because such a change entailed modifying the assortments, the collaboration of the managers in charge of purchasing of the products was necessary. Very early, the test required the active involvement of many actors. The analysis of the beginning of the project and the interviews of the people involved revealed that the first participants created a first informal network due to the following factors.

First the store manager, the department manager and the head of the purchasing department found a common interest in increasing the books and records departments, though it was for different reasons. Due to the results of the survey, the store manager expected an increase in its turnover by extending the area devoted to those products. The department manager considered this change positively because it provided the opportunity to extend the quality of the assortment. This change also fitted with the purchasing manager's perception. He saw a new way of resisting specialised competitors.

Given those positive feelings about the change, this common interest resulted in frequent discussions providing the basis of the design of a new solution. Through informal discussions

(the actors interviewed related from those conversations although no reports mentioned them), these actors began to confront their views on the new implementation. Those exchanges ended in the implementation of the store and to the creation of a new representation. The idea of the creation of new categories of products classified according to their synergies for the customers was born.

The third factor, which contributed to the creation of this informal network, was that the managers involved in this new process shared the same level of power. They were high enough in the hierarchy to trigger tests and to decide on the re-implementation of one store. They were close enough to the general management to benefit from a decision to extend the trial to the other parts of the organisation. But they were close enough to the operations to feel the necessity to develop a new store concept in order to resist the pressure of competitors. This position, typical of the middle management, gave these people the means and motivation to develop innovation.

The invention of new solutions, the first trials and validation of the individual intuitions, their support by a network of interested actors and their potential contributions to the strategic intents will contribute to take the decisions right through the development process. However, the two developments could not be achieved without the agreement of the general management. We stated in the two cases that the general managers contributed to the development. Nevertheless, as the other actors, they have to decide and choose in a situation of uncertainty. This results in the achievement of two objectives. The managers have to guide the project and to give their agreement on the main decisions. But on the other hand the managers have to leave the actors free to invent solutions and thus to support the departure from the existing frames. Doing both and contradictory tasks results in what we called paradoxical management.

2.1.5. Paradoxical management of “innovating”: making sense and guiding the projects.

The examination of the two developments revealed that in the two cases, the general management contributed to the project's process. Although it was done very differently in the

two cases, it can be said that the two innovation projects would not have succeeded without this support. This intervention may be qualified as “paradoxical management”. On one hand it must be considered that without it, the project cannot advance. But on the other hand, the general management did not contribute directly to the different stages, which were performed by so many actors. This managerial attitude, which gave directions and at the same time left freedom to the actors, appeared to be one of the important ways to support innovation projects.

In the case of the bank, the general management used three different means in order to obtain the final results. First, in a top bottom logic, it defined the initial strategic intent in broad terms: “changing the ‘neither remuneration nor invoicing’ principle to move to a transparent relation with the client. In exchange to the remuneration of the accounts, each service must be invoiced. This formula only defined some principles of change without providing any solutions. It announced a deep change in the relations with the client but did not provide the way the bank should manage it. Rather than being directive, the general management gave only the impulse. Such action could appear as being a poor and inaccurate act. But at this stage of the project, as none of the specifications existed and, as all the solutions remained to be invented, it is impossible, and it would be dangerous, to be more precise. The assertion of a broad and inaccurate intent is to create the perspective, to provide the general direction in which the actors will have to move. This assertion created the tension which will induce the change but without giving any clues on the ways this move must be made. By providing the frame of thinking the general management opened the space for new interpretations. By providing the intent and remaining silent about the ways and means that should be used to achieve this purpose, the general management encouraged and opened the way of forward towards individual interpretations.

The second means used by the general management was to organise the sharing of this tension. This means that it communicated strongly and for more than one year on the future transformation of the context which led to the change in the rules of the games. During the same period, many meetings with the middle management were used in order to assert that the relationship with the client must change due to the context of the Euro. During those meetings, no solutions were provided. Their purpose was to explore the opportunities and problems linked to the strategic will. The participants had to analyse why things must change

and to understand the impact of the change of the client's relation with the organisation. Because the initial intent was broadly specified, those meetings were focused on its interpretation by the middle management. Because the interpretation was blurred, it provided many opportunities to the actors to contribute to its definition. Therefore, the intent of each meeting was not to solve but to identify the problems. They aimed at sharing the strategic intent and at its diffusion within the networks, the organisation and the departments. Such formulation helped to increase the involvement of each actor by providing them with the possibility to add some comments, to bring their own interpretation, contribution and knowledge. More broadly, during this stage the intent of the general management was to install the idea of a change and to prepare people for those changes. It was also to identify the potential problems and risks induced at the level of the market, but also and particularly for the organisation itself.

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This stage finished with the publication of a videotape. The general management used this means in order to enlarge the strategic intent in a more precise way. As the general manager said:

“The videotape was the result of a meeting of the board. Many fears were expressed at this period. We adopted the principle which consists in communicating on the principles. Because the job of the board is not to deliver the final offer, those principles should be adopted by each of the working groups. We had to make the employees sensitive to the project. We have to show the overall principles.”

The national general manager and the national project manager developed the strategic reasons that led to establishing new guiding principles for the relationship with the client. They emphasised the importance of success on this project. More broadly they introduced the change to all the staff members by describing its strategic importance. At this time, anything was said about the means that should be used and about the final result. The only thing that was definitely clear was the determination to go ahead and to achieve this final goal.

The third means used by the general management and by the project manager was to explicitly define some guiding principles. In order to assess the first proposals, the project manager emphasised three of them: “transparency, rank on the market and differentiation”. The first

one was “transparency” in the relationship with the client. This principle was adopted because of the previous and failed experience of 1987. Because the change of the relationship could raise client suspicions and thus lead to another similar disaster, the project manager emphasised that none of the new rules should be clearly formulated and explained to the client. All of the new transformations must be clearly understood by the client in order to avoid mistrust and misunderstanding. This principle means that, whatever the objective or process might be, it must be explicit and simple to understand. The second principle, also linked to the previous unfortunate experience was that the Crédit Mutuel did not want to be perceived as the initiator of the project. We called this the principle of “rank on the market”. This could be easily understood because of the French consumer attitude toward the bank which could be summed up: “the bank is a public and free service”. The general management tried to reduce the risks by choosing to be second on the market. Given the importance of the transformation, the general management decided there were too many commercial risks to being the first on the market. Such a principle meant that the launching date remained linked to the competitor’s development. This in turn required the development of a solution and then a waiting period for the expected launching.

One example illustrated the use and strength of these guiding principles. During the development, the manager in charge of writing the invoicing procedures had to choose between many alternatives. The first one, which respects the “transparency principle”, required sending a summary of the operations in order to obtain an agreement before the emitting an invoice. Because it required sending two letters each month to the 240.000 clients, this process appeared to be very costly to the manager who decided to both details and invoice provide in the same letter.

“From the start, I did not change my mind. I was in favour of sending a receipt enclosed with the monthly account statement. The general manager never changed his mind about the invoice. If one plays the “transparency principle”, we have to adapt the invoice.... We presented the two solutions during two qualitative surveys. The clients chose the receipt because they do not want complicated solutions. They also said that the separate invoice will cost the bank too much and that they did not understand its use....”.

Though the test revealed the clients' preferences, the project manager eventually decided to adopt the first and costly solution. This revealed clearly how the adoption of guiding principle may overcome the lessons of experience.

The fourth means used by the general management and the project manager in order to direct the project was the vocabulary. In a first stage, the strategic intent was called "remuneration-invoicing". This expression was used for example in meeting reports in order to refer to the project. It corresponded to the financial aspects of the project. But, as the invoicing was expected to exceed the remuneration, such a definition (which would lead to a balance between the two) would induce a negative perception from the client. Moreover, as one of the strategic goals was to differentiate the bank from the competitors, the emphasis on "services" was important. Thus, after one year, the project manager decided to adopt the expression "service-price":

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"Initially the project was been called "remuneration-invoicing". This means that in exchange for the remuneration of the accounts, each service must be invoiced. We did not agree with this principle. We changed the name in order to assert that our purpose was to deliver a valuable service. Remuneration-Invoicing means that you don't care about the value delivered to the client. We adopted "Service-Price" because the actual problem is: do we deliver a valuable service? Is this value perceived and is the price perceived as an equitable counterpart of the service?"

The general management tried to reinterpret the relation between the bank and its client. Rather than being a kind of administrative and public service, the general management tried to induce a new interpretation frame that transforms the relation between the client and the bank. This new formulation specified only the new rules of the games but without providing any solutions. It announced a deep change in the relation with the client but did not provide the way the bank would manage it. Moreover, it did not provide the means which would be used in order to achieve this result. Rather than being directive, the general management gave only one "impulse". This indicated that the vocabulary is also used as a means in order to focus the attention on the strategic part of the development.

These different means clearly "framed" the project. Although none of them was used in order

to describe a specific part of the service, they appeared to be useful to guide the actions and to support the decisions. The way they worked is by introducing intent, a tension that pushed the actors to adopt one solution rather than another one. They worked as “frames” which reduce the uncertainty and the number of potential choices. By doing so, they provide the actors with the directions in which they can act. But even though they gave directions, they remained inaccurate and operation oriented. This lack of precision is as important as the intents. It let each actors interpret the strategic intent by introducing their own purpose and interest. These means, because they did not indicate the methods that must be used to realise the project, provided the actors with the possibility to contribute. Because of the freedom they gave to the actors, they enlarged the initial intent with their own purpose. A similar statement was made for retailing though the managerial choices appeared to be different.

Whereas the Crédit Mutuel project appeared to be characterised by a top down impulse, Cora’s appeared to begin as a bottom-up initiative. The initial intuition, linked to the decrease of market share of the non-food departments, was that the offer of this part of the store must change. The middle management strongly supported this initial statement. In contrast to the bank, the strategic intent was not strongly in retailing. It can not be said that the general management gave the initial impulse. Many participants mentioned the relative silence about the project. On one hand, there was support for the testing of the idea and of the concept. On the other hand the way the project must be achieved remained vague. The testing was a first and significant move according to the size of the non-food part of the store that must be removed. But it was not the clear formalisation of a definite intent.

The non-food purchasing manager and a consultant began to propose a change they named “Universe concept”. The very first definition appeared to be very poorly designed. Which kind of products must be included in the Universe? How much must be created? What could be the impact of this change on the stores? These points were not included in the initial assertion of the “universe concept”. The first documents illustrating from a formal agreement of the general management on this theme date from August 1994. This does not mean that the decision to launch was taken at this time. This first stage resulted in the decision to test the concept in one store as written in the memo from the chief executive in October 1994. At this stage, the “universe concept” is only mentioned with no further details.

Though no guiding principles had been formally asserted, the use of vocabulary provided the same possibility as for the bank. The word “universe” rather than the one of “department”, provided the possibility of giving another interpretation to the store’s organisation. A deeper semantic analysis of the word revealed the interest of its multiple meanings. The word “universe” refers to the dimension of a space, which includes multiple forms, matter and energy. In a subjective perspective, it is also used to speak of someone’s whole experience. Finally, it introduced a connotation of size by referring to the apparent infinite dimension of the space. In contrast to “department”, such a word, applied in the context of retailing provides by those different meanings many possibilities of interpretation. It provided the possibility of mixing many different products, to include in the same concept products and services. Moreover, it also covers the individual experience and thus provided a opportunity for the staff to think about the perceptions of the client facing the shelves. In addition, because it included the concept of size, it introduced the change of scale. Rather than thinking in small pieces, it introduced the idea of having a broad approach to the way consumers experienced the store and suggested crossing this “universe” with the store’s organisation. In this sense, the move from “department” to “universe”, by separating the actual organisation from the potential, provided the means to think differently and open new directions.

This interpretation is reinforced by the successive change which occurred during the development. At the very beginning of the project, the meeting reports spoke of the “universe” project. The identification of both concept and project were the same. But at the end of the project, the word “department” reappeared. When each “universe” was defined then the building of a division of the products and service was necessary. At this period, under the topic of “universe”, the reorganisation of the departments began as a refinement of the broad definition of the new borders. This demonstrates how the managers used the vocabulary in order to enlarge the thinking on their innovation. The use of another word changed the way the actors thought about their own activity. Thus, we considered the use of vocabulary as one of the means used in what we called previously the “paradoxical management” of the innovative projects. By the use of the vocabulary, the management supported and directed the development but left very large freedom to the actors to invent new and innovative solutions.

Through these different means the general management and also the project manager supported the advance of the project. By using the techniques we listed before they upheld the

development process. They triggered the process directly or indirectly by assessing a strategic intent or by using the existing tensions within the organisation. They reduced the uncertainties by giving a broad “frame” which defined an orientation but left the freedom to the actors to contribute actively. They achieved supporting the development without taking charge. This managerial attitude, though differently applied in the two cases, resulted in two broad effects. First, it gave the impulse to the tension, which made the actors change the way they think and produce results. It left no ambiguity about the necessity to move. But at the same time, it left enough space to experiment with new ways and to build new alternatives. This left the space for the actors themselves to design and implement innovation.

2.1.6. Conclusion of “Sensemaking while Innovating”.

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The emergence of an innovative project appeared to be strongly anchored in the organisational sensemaking processes. During the achievement of the operational tasks, the individual produces an ongoing flow of interpretations. The negotiation of sense, achieved through formal and informal conversations, results in the building of convergent or divergent interpretations. The convergence does not mean that the cognitive representation of the reality may be similar. One can conclude that the interpretations converge for a small part of the project. However, even if this part remains small and partially divergent, the occurrence of innovation seems to be impossible without any convergence in the interpretations. The building of divergent inferences could not support the achievement of collective tasks.

The interpretation process unfolds right through the development process. The interpretation process occurred each time an event, a piece of data or an action remains uncertain. This underlined that the uncertainty, or the feeling of uncertainty could contribute to trigger innovations by opening the scope of the interpretations. Contrary to the routines --- the recognition of a given context triggers a learned answer --- uncertainty means that no fast and previously learned answer may suit the context. As result, a strong cognitive activity will produce many options of what could be the appropriate behaviour --- this action should produce this result ---. The production of an innovation could be defined as this creation of new causality links. Re-interpreting means that the individual either admits or is obliged to adapt their way of thinking about reality. The uncertainty of the environment or the feeling of

uncertainty will increase the service innovation.

Moreover, during the innovation, the collective interpretation process appeared to be constant, intense and crucial. The fewer interpretations that are produced, the less negotiation develops the sense of events and the more invalid or uncompleted solutions will be produced. This argues for the adoption of an organisational culture that could nurture, support and analyse the flow of ongoing interpretations. As an example, the extension of the scope of the individual experience (by adding new competencies to the group) will result in the production of a richer body of inferences, as long as the confrontation of ideas remains possible.

As the negotiation of sense is achieved collectively, the communication networks will to play a determinant role on the course of the project. Where it is easy to confront the interpretations of the events the result will be a richer and deeper perception of the reality. Consequently, the existing formal and informal networks have an impact on the innovative process by opening or closing the interpretations. The exclusion of the competencies from the existing networks, which can be done intentionally or not, will result in the impoverishment of the potential body of interpretations. This results in the failures or discrepancies that could invalidate or delay the innovative projects. The management of those networks appeared as a good means for the guidance of the projects. By selecting the required competencies, by integrating new members, by avoiding the exclusion of members who must provide an important contribution and by supporting informal communication and mutual adjustments, it should be possible to improve the development, either in terms of costs or in terms of speed.

Nevertheless, the existence of a shared assumption about an event does not mean that the interpretation may be efficient. The building of a common interpretation may enrich the perceptions or be a trap. A shared assumption that is not tested and validated could lead to failure. This means that the interpretation process in itself is not sufficient to relate the success or failure of the development process. Testing the interpretations refers to the learning process.

2.2. NEW SERVICE DEVELOPMENT AS A LEARNING PROCESS.

The development appeared to be guided by a succession of interpretations produced by each participant of the organisation. Nevertheless, the observations revealed that this ongoing flow of representation cannot relate to the decisions that are taken all along the process. Though some of them were taken on the basis of a shared interpretation about the consequences, many others rely on a learning process. Thus, we tried to observe the entire scope of learning and of sequences of learning, their content and nature and the way they are used by the actors. Organisational learning appeared to be the second strategy used in order to avoid the uncertainty resulting from the process of innovation.

Because each of the two developments referred to many departments, people and processes, they cannot be considered as a linear and simple course. For example, the beginning of the two projects revealed neither duration nor budget being clearly defined. The major reason of this surprising absence was that, at the very beginning, this information was not available. As a result, many launching dates were successively agreed and postponed. Rather than being pulled by a clear image of the final result, the journey of innovation is pushed by the necessity to find solutions to unexpected problems arising all along its course. **The adoption of the manager's perspective on both projects revealed that the development tasks are made up of a succession of problems which must be overcome.** As a consequence, we did not focus our attention on the course of the project itself but on the nature of the problems and on the way the people solve them. We intend to review in this chapter the strategies used by the actors to surmount the difficulties. The approach of the development in terms of successive sequence of "problem solving" led to the elaboration of a list of the major tasks the teams produced in order to achieve the development. Figure n° 38 summarised the results. In some cases, the problem was encountered by the two organisations. In some others only one organisation had to solve it.

A strict comparison of the list of the problems the organisations had to overcome exhibit more differences than similarities. Both organisations and final results differ strongly. The nature of the intermediate and final results, the number of the stages and also the kind of actors involved led to the invalidation of the development models based on pre-defined processes. The differences between the two projects rely on broad differences. The nature of the problems which must be solved appear to be strongly linked to the different contexts.

**Figure n°38: Illustration of the single curse of the New Service Development:
Comparison on What has been learned and How during the two Developments.**

Crédit Mutuel	Cora
Survey on potential existing offers	Not done explicitly. Mainly realised through the analysis of the competitors and through the visit of other stores
Measuring clients reactions to the offer.	Idem
Design of an offer composed of different packages including different financial products. Writing a script for each possibility.	Design of an offer composed of the creation of the new categories
Finding a commercial name for the packages	None as the concept has not been directly promoted to the clients through the use of a commercial name.
Making budget simulations	None. Making turnover simulation in order to balance the new departments to a similar size
Integrating the change of the legal environment	None
Co-ordinating the development and launch with the other federations —	None. Each store had to implement the new structure after Jan 1999. At this time, some stores finished the project, other intend to begin later.
Integrating the legal aspects of the project in the contract.	None
Launching a project for a date settled very late in the process.	Changing the launching dates, due to unexpected problems of reporting
Training and motivation of the sales staff.	Managing organisational changes with change of responsibilities, and less people to manage the same turnover. Motivate the staff within the stores.
Managing a huge volume of contracts.	Client Information
Writing the computer program integrating the procedures defined earlier.	Writing the computer program integrating the new categories of products and given a history of sales.
Build a price policy.	None
Defined a process for invoicing the client	None
Building a promotional plan	Promoting the new concept within the stores
	Reengineering of the store's warehouse.
	Changing the organisation of the purchasing department according to the new categories of products.
	Building a new database for the day to day reporting.

Consequently, the nature of the output resulting from the stage differed strongly. In addition, the linking between the different stages is also anchored in the internal and external context. This leads to a major conclusion resulting from the comparative case study. Due to the differences reported, one must conclude to that the development of new services is a

singular process:

- **It will be difficult see impossible to transfer to other organisation given the strong differences in the organisational features, the past of the organisation, and the different environments. The results highlighted that the design of new service cannot be the reproduction of existing solutions. Even though the final result could be similar in the case of pure copy, the way it is produced is strongly embedded in the organisation, in its features, in its culture and in the previous experience of its members.**
- **If the transferability of the solutions from one organisation to another is weak, then each organisation must learn while innovating. For our research, the statement of the individuation of the curse of each innovation entails that learning is necessary for each organisation to perform new processes.**
- **From the point of view of the research but also from the managerial concerns, this statement means that the only activity that could be identified as common concern to each development is a learning process. It invalidated the previous research which aimed at the identification of formalised development process, at the definition of broad stages and on the formal validation of decisions. **If the development process is a learning process, this means that the main stages and decisions will be defined according to what will be learned during the design.** Creation of new services can't be based on the reproduction of the lessons of the past.**

This put the development teams in front of a difficult journey. During the design they will have to cope to new problems they don't know. They will have to solve unexpected situations and to finalise decisions they never produced before. Each development has its singular curse. Facing newness entails building learning strategies able to reduce uncertainty or to adopt random choices. Building more insights on the learning strategies linked to innovation could help the understanding of development process and by so the design of new offers.

2.2.1. Nature of the problems solved, of the outputs and their link up.

A strict comparison between the two processes emphasised that each organisation had to solve problem the other did not encounter. For the bank, it was the building of financial simulations, the finding of a name for the packages, the integration of the legal change of context, the building of a new contract established with the client, the building of a price policy, the design of a promotional campaign and the design of an invoicing process. For the retailer, it was reengineering the store's warehouse, the change of the purchasing organisation and the building of a new database for the daily to day reporting. These different tasks existed in one of the organisations and not in the other.

The reasons for these differences are more linked to the respective contexts than to the will or to the deliberate choice of the managers. The example of the client invoicing for the checks illustrated this point. The principle of invoicing the cheques has been defined in France since 1935. The removal of this legal context, mostly induced by the introduction of the Euro Currency, conditioned among other things the launch date and consequently the development planning and also the price policy. This major constraint lasted until the very end of the process, obliging the banks to freeze their final options. Due to this situation, the project manager, rather than making choices on the basis of a business plan, decided to progress on the basis of a detailed costs analysis. Knowledge of the cost of each service would be possible to adapt the package's contents to the final and later choices. It would also be possible to make a final choice within the margins of price for each package. This original solution, which left more uncertainty in the process until the end, was the answer to this specific problem. Such a solution was not required in the retailer's case because the problem did not arise.

The problem of the client understanding of the offer also illustrated this point. Because of the intangibility of financial products, the legibility of the offer remained problematic. This increased the risk of a rejection of the offer due to the lack of its understanding by the consumers. In order to avoid this situation, the project manager adopted the principle of a trial period, which would train the client through the use of a simulation. For three months, the bank statements would mention what should have been invoiced on the account but without making any debits. Such a specific situation was ignored in the previous development. Thus

the development team had to invent solutions, in particular new computer programs, in order to surmount the problem. Those statements demonstrated that the internal and external context influence each project to the point where both problems and their solutions diverge strongly. The same statement can be made concerning the link up of each stage of the project.

The interviews revealed that one of the crucial link ups was the passage from the concept to its implementation within the network. Whereas this operation had to be achieved in one sole step in the case of the bank, it was made progressively in the case of retailing. Though the first tests in one store had been encouraging, the extension of the “universe concepts” to the other 60 stores raised many questions linked to the local contexts. It raised for example the question of its adaptation for the smallest stores of the network. The results of the test remained to be confirmed for the profile of the small town population. The internal changes required to re-implement the stores had to be defined. In some cases, the department managers and store managers were not convinced of the interest of the change. As a consequence, the nature of the actions but also the planning adopted in the different stores differed strongly. The “universe projects” were linked to the local managerial projects in most of the cases. On the other hand, the same passage for the bank required only the implementation of the offer on the computer screen so that each salesperson could propose a package. No local adaptation nor was possible as any divergence in the planning. The link up between two stages differed radically.

The vision of the development as a process of problem-solving lead to the conclusion that each development must be considered as a single experience. Because of the differences we observed, it would be almost impossible to transfer the solutions from one organisation to another organisation or even to another project. The creation of a new financial portfolio could not constitute a valid experience for the redesign of a store. Such conclusions would lead to the impossibility of learning anything from an innovation project except if we consider the problem-solving process in itself and the competencies required in order to perform it.

2.2.2. The problem-solving process.

The interviews realised throughout the project emphasised the development as being a succession of solutions created in order to solve the problem which occurred during the development. The creation of new packages was a major challenge for the computer department because it changed all the rules of account management. Changing the rules means that the previous ones did not fit with the new purpose and therefore the need to create a new way of providing an answer to a specific problem. Though the entire process was composed of successive problem solving, we would like to develop the way the project managers of the Crédit Mutuel designed one part of the innovation: the process of invoicing the packages.

The first part of the project was focused on the design and the testing of the packages. During this stage many principles were adopted. First the project manager proposed that the use of any service must potentially trigger an invoice. What was new in this case was the “any”. The use of a credit card, of credit and of an external transfer was previously invoiced while on the contrary, the use of cheques, of internal transfers and many other services was not. The adoption of this process was more the assertion of a strategic will rather than a result of client expectations. Nevertheless, it appeared to be one of the potential solution to reverse the negative trends in profitability. This decision entailed the creation of new computer programs in order to count each operation and summarise them for the invoices. This choice would have created a very complex and detailed invoice. Though he did not test this option, the project manager decided to reduce the complexity by proposing packages. For a given formula and a given price, the bank would include a portfolio of services and a given number of operations. This decision raised the problems of the number of packages, of their content, of the choice of the services and of their capacity in terms of number of operations. This complexity was reduced by a first arbitrary decision. Because one of the important federations, the Crédit Mutuel d’Alsace had previously experimented of packages, it was decided to adopt two different packages on a national level. This decision created strong reactions in the Crédit Mutuel Anjou. The marketing manager reacted to many criticisms and asked for a further test of the decision. This led to the hiring of a specialist in market research as we said previously.

The first tests provided two results. Three packages should be preferred to the initial proposition. Second, the content of each package was refined and fixed according to the

client's expectations. The experimentation of the offer provided the means to solve the design problem. Nevertheless, during the first implementations, the federation of Alsace kept its initial recommendation which produced poor results. Then, and only on the basis of a failure, they changed their choice and adopted a three packages offer as did the national confederation.

The episode of the package's definition demonstrated a learning process. Due to previous experiment a first solution is created. The internal debates and disputes lead to adopt further investigations. The debates and exchanges around the first representation led to a test which invalidated it. As a consequence, a new representation, and the design of the package, could be proposed. This process may be clearly identified as a learning process. But it must be noticed that it involves many actors such as the national project manager, the general management of another regional federation, the marketing manager of the Anjou federation and the specialist in market research. What provided learning dynamic in this case was the conflicts in the representations. The divergence of the opinions led to the testing of the proposal. The progress relies on the debates and controversies in the sense that they led to a formal experimentation.

Then, and only because the definition of the content has been validated formally, it was possible to write the procedures for account management. Among them the invoicing process appeared to raise another debates and problems. The first one relies on the main stages of the process. The ideal solution would be to send a report summarising the operation's consumption and then to withdraw the corresponding amount of money. This appeared to be more complicated than expected. Because the computer department treated the operations in batches as the adoption of a detailed report could lead to an incomplete summary. Moreover, this decision entailed sending the statements by mail and therefore increasing strongly the cost of the account management. Thus, the manager in charge of the writing of the procedures proposed including the statements in the existing documents sent to the client each month. This means that the monthly invoice could be transferred before the client verified the amount. The debate lasted more than 6 months until the project manager decided to adopt the first solution despite its cost. In this case one cannot speak of learning based on client preference. The decision was been taken according to the transparency principle. If applied, this principle meant that the client must know the amount that would be invoiced before it was

withdrawn. This problem solving strategy could not be qualified as a learning strategy as the alternatives have not been formally tested. In this case the project manager used one of the “guiding principles” previously defined in order to make a choice. Such a decision may appear as legitimate if the adopted solution reinforces the “transparency principle”. But on the contrary – the customer perception of this decision may be for example that this complicated process created too much paper – it may lead to the rejection of the process.

This episode suggested that many problem-solving strategies were used in order to design the offer. First it is possible to solve the problems and questions through the use of formal tests. By submitting representations to people, the managers learn to transform the initial solution into another and more efficient one. The use of this strategy seems to be dependent on the internal debates, conflicts and divergences of opinion. The recourse to a formal test is triggered by a divergence in the representation of “what the things should be”. But the use of the explicit or implicit “guiding principle” may be also adopted. The interest of doing so is to accelerate the decision process and to reduce its costs. But one of its disadvantages is that it increased the risks of failures.

During the design of the offers, the development reduced uncertainty by many means. One of them is the use of the previous experience. Another one is the use of some tacit or explicit guiding principles and the last one may be a formal learning. Each of them contributed differently to the decision. The use of previous learning is very fast and induced no additional costs. But it provided solutions adapted to the previous contexts. **On the other hand, the strategy of learning appeared to be very much time and budget consuming.** But it provided full answers to complex questions and it provided the opportunity to validate new arrangements, new procedures and complex intangible commercial offers.

All the actors involved in the process use the three strategies throughout the development. Two factors led to choosing one strategy against the other. First, the perceived importance of the decision will lead to the choice of a full learning by testing the reactions extensively to a proposition. During the stage of the definition of the packages, the bank invested in a full and complex research protocol in order to validate the core of the offer for the coming years. At the same time, the general management selected a name for the package. They asked a consultant to propose many names and validated one of the propositions without any formal

test. In this case, the perceived importance of the name of the packages was very low.

Second, the perceived uncertainty led to the selection of different problem solving strategies. When the scope of choices is so large that too many things need to be analysed, then the actors used a reduction process by choosing one option resulting from previous experience. The initial choice of two packages referred to a previous experience. During this initial choice, it would have been possible to adopt four or five packages, including many options, for a large scope of consumer expectations and use. As it was impossible to test all the options at the same time, and because one must be chosen in order to measure consumer reactions, the managers adopted the solution previously experienced. Then, due to the reactions of the marketing manager who perceived this choice as being crucial in the future success of the offer, a full learning process has been implemented.

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Third, the time and budget also influenced the recourse to one strategy. Because a project is modified by each decision, it is impossible to test the entire range of options. The actors must select the problems they intend to test. The example of the choice in the invoicing process revealed that for the problems which are not perceived as crucial or for events which do not give too many uncertainties, then more simple problem solving strategies are used. The “guiding principle” method is in this case very useful if any previous learning exists on the topic.

Furthermore, the perspective of the development as a problem-solving process provided many opportunities to understand the actual nature of the innovation. Because learning strategies are the most extensive methods to provide answers to the questions that arise throughout the innovative process, we detailed the different means used to learn.

2.2.3. Actions of learning

The interviews of the participants led to the statement that the learning strategies were used when the above criteria were fulfilled. Further examination revealed that under the broad concept of learning many actions were implemented in order to make a choice among many alternatives. We observed the experiments directly or indirectly managed by the actors in

order to learn. By coding the interviews we elaborated a listing of all the activities used by the actors in order to adopt a specific solution for the innovation. The interpretation of learning actions must be carefully conducted. As example, the collection of information could be a learning action or a simple economic observation. An informal discussion may be interpreted either as a social relation between two individual or as the interpretation of a given result. Thus, we selected the events related by an individual only when they were related to a change of procedures, of “rules of the thumb”, of the routine behaviour involved in the new service. We summarised these actions as follows in figure n°39.

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Figure n°39: Actions of Learning that has been implemented while Innovating.

Main activities	Definition	Example
Trial and Error.	The individual/team implement a solution in order to analyse the reactions of its adopters. Most often this trial results in the adjustment of the solutions.	Retailing: The team carried out a trial in one store in order to analyse customer reactions.
Simulation.	The individual/team create a fictitious solution by writing or drawing an expected result. This draft provides the basis of discussions between team members.	Bank: The team created a computerised simulation in order to build the quantitative profile of each segment.
Observation of other Experiments and Behaviours.	Trying to benefit from the experience of other organisations.	Retailing: The team visited other outlets or companies in order to analyse the way they solved similar problems.
Building New Representations.	Because an unexpected problem arises, or due to invalid experiment, the individual/team must find a new solution. Then a new fictitious solution is created in order to solve the problem. This is what we call a new representation.	Retailing: The creation of a promotional leaflet creating new categories of products suggests that the organisation of the stores may be changed.
Formal or Informal Discussions.	Having to solve a problem, individuals confront their opinions and change partially their minds about their own solution.	Bank: The definition of the procedures and of the programming were intricate. As a consequences, people in charge of those two processes worked through conversations to achieve a close mutual adjustment.
Building Hypothesis and Conjectures.	Expectations about the behaviours of both the consumer and the staff are produced in order to justify the decisions. Some of those expectations were tested, some were tested later.	Retailing: A hypothesis of what could be accepted by the consumer was produced throughout the development process, based either on personal intuition or on tests.
Transfer in the development of previous personal experience	The individual transfers the results of previous experience to another context by making the hypothesis that it could work in the new context.	Bank: During the computer programming stage, people in charge of the task anticipated on what could be asked about promotions in a near future.
Acquisition of information	The individual/team collect existing information in order to reduce uncertainty.	Bank: The decision on the launch and the final offer was linked to the conclusions of the Minister of Economy.
Making the existing procedures and processes Explicit	The individual/team made the existing procedures adopted to perform one task explicit.	Retailing: The working group in charge of the innovation made the interaction process explicit by creating an internet site where each innovation is formally described.
Transforming the observations and tests into formal procedures	The individual/team used the results of the tests in order to transform behaviour, to write new procedures and to adopt new rules.	Bank: Through the use of internal discussion, the manager in charge of the writing of the procedures adapted them to the constraints of the other department.

Many comments must be added to the description of the learning actions. First there is not one learning action during the innovation but many actions at all the levels of the organisation.

Learning is not realised at one single level and during one stage but through successive actions performed by all the actors involved in the process. Each learning action is concluded by a decision, which contributes to only a small part of the development. Even when the testing of the packages resulted in their careful design, many stages of the development remained to be performed and required further learning. The computer department had to learn to improve the programs and the sales team had to learn how to sell this package in order to convince the clients. Thus, learning occurred from the beginning of the development to its implementation and even after. Rather than having a single process made of well identified stages, learning could be considered as an ongoing process, made up of a lot of multiple experimentation realised by multiple actors. This progressively led to a final result that is supported by the entire system in both cases.

Second, the actors of the development produced three kinds of outputs through the use of learning actions. The learning actions contributed mainly to the content of the offer in the two cases. Through the analysis of customer reactions, which imply the creation of a first rough design test, the final offer was fixed. As we said previously the final result was not elaborated in one stage. The bank used no less than three formal tests over the three years to refine the initial proposal. The retailer tested the implementation in many stores throughout the five year development. The second output of learning is the decision-making. Most of the time, the results of the tests were submitted to the hierarchy in order to obtain backing for the proposals. The presentation of the results was used to obtain support. The learning actions appeared to be used each time a choice had to be made, each time a solution to a given problem was proposed. The actions of learning refined the initial intuitions of the individuals by providing more rational arguments. The third output of learning may be the design of the internal procedures which will support the interaction process. In this case, the testing procedure is mostly based on the crossing of departmental reactions to the intent. In the case of the bank, the definition of the complex procedures was achieved through multiple interactions between the manager in charge of their writing and the computer department. This co-operation was deliberately used in order to anticipate the problems which could appear during the following stages. The integration of the computer department knowledge on programming into the size of the development accelerated the final issue by avoiding rewriting some parts of the procedures. Whatever the case or event, the outputs of the tests were a transformation of the initial ideas.

Statements of the interest of learning could lead to the conclusion that the entire development is a learning process. This is not the case. Learning appeared to be triggered only when the solutions usually adopted produced non-expected results. When the previously adopted solutions are expected to produce satisfactory results, then they will be favoured. The choice of the learning actions appeared as an implicit choice of economic solutions. The development process is made of multiple solutions and problems successively solved. The adoption of learning strategies for each of them should lead to an increase in the time necessary to solve them. The collection of information, informal discussions, the building of hypothesis and their testing require a high level of human investment. In contrast to routine decisions, the solving of problems through the use of learning strategies involves to devote more effort and therefore a higher budget. As a result, the learning actions are not used throughout the process as we previously said. Sometimes, due to the perceived importance of the decision, it may be more rational to use simple principles such as the “guiding principles”. In other cases, the previous competencies are assessed as being sufficient to produce a satisfactory result. But in all the cases, the learning actions consume time and budget and therefore are not used for the entire process.

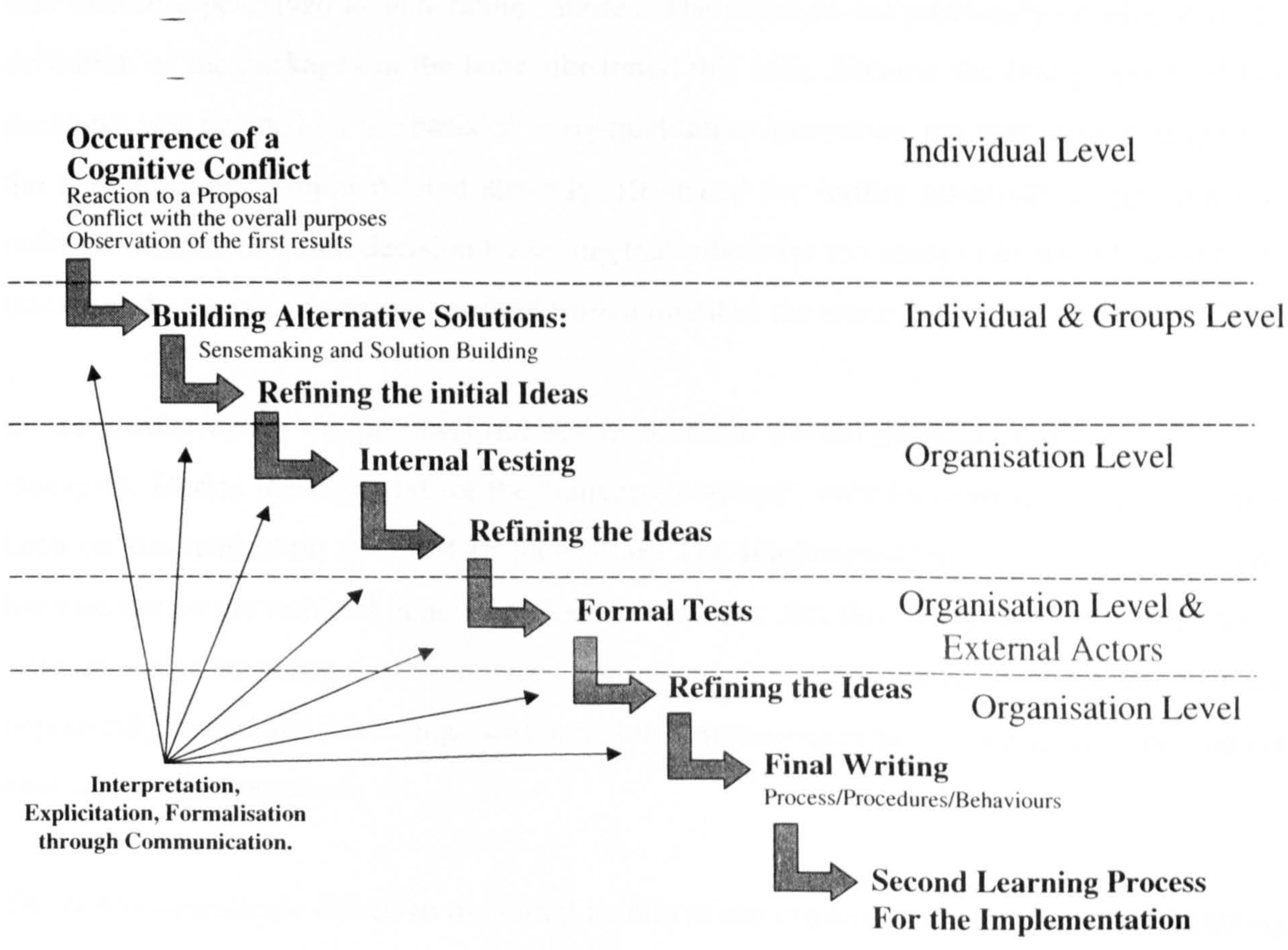
Fourth, we observed that the understanding of learning requires a systemic analysis of the phenomenon. The research on one sole component, the information system for example, or the review of the individual competencies, could not contribute to understanding the way those means are used in the learning process. Because learning is a process, one must integrate the different “tangible” components such as be the information system, the individual competencies, the available information, the existing set of procedures and rules in the process of exchanging the representations between individual, in the process of building hypothesis and tests and in the process of transforming the validated hypothesis into rules and procedures. A full examination of the sequences learning must be added to the learning actions.

2.2.4. The stages of the organisational learning.

Each time the outcomes of the decision remain ambiguous, the actors used learning strategies

in order to accumulate knowledge with the final intent to build an argument for the choice that has to be taken. As learning while innovating is achieved through a process, we intend to describe it according to our observations of the learning sequences. We used the concept of learning sequence rather than stages. This concept is used in order to explain the dynamic of the process. What many authors called stages are actually made of multiple tasks, achieved consciously or not, in a continuous progress. Moreover, we observed constant and multiple feedback loops which occurred. Rather than using the concept of stage, which refers to a fixed state, we preferred the one of sequence, which refers to a fluid and ongoing approach of change. This process is summarised as follows in figure n°40.

Figure n°40: New Services Development: Turning Individual Intuitions into Organisational Processes and Actions.



The beginning of the learning process is characterised by the occurrence of a cognitive conflict. What we call a cognitive conflict is the discrepancy occurring between the

expectations of an output made by an actor and the actual result. Such a situation generated a gap which broke the mental frameworks linking a cause to an effect. In our two cases, the initial gap resulted from a decrease in the results achieved by the organisation. The market share of the non-food competitors increased and they set up a large number of new outlets. The bank's profitability decreased continuously during the 90's. To this statement, some actors added other unsatisfactory results. In the case of the retailer, the purchase manager who developed the initial project had to cope with co-ordination problems with the stores and found some opportunity to improve this situation. The actors interpreted these information as the signal that something was not working as they expected.

The cognitive conflicts occurred throughout the development process and had many origins. In some cases, a solution presented did not fit with the existing procedures and know-how and was therefore perceived as generating failures. The example we previously developed of the definition of the packages in the bank illustrated this case. Because the first proposal of two packages was decided on the basis of thirty qualitative interviews, the marketing managers of the Crédit Mutuel Anjou reacted strongly. He asked for further quantitative approaches in order to validate that first decision by saying that otherwise too many risks would be taken. In this case, the cognitive conflict resulted from a misfit in the know-how.

In some other cases, the proposal did not fit with the overall purposes and positions of the managers. During the first trials of the "universe concept", only fourteen store managers were keen on the realisation of a test in their store. The implementation represented some risks because each store removal generated client complaints. But this change also required a lot of time in order to remove the shelves. Therefore, the store managers interested had the opportunity to achieve this change within a global management project while the other did not have this kind of occasion.

The others cases were linked to the initial results of the implementation. When the marketing manager implemented a simulation which led fifty sales staff to sell the package to existing clients, she observed that the electronic office could deliver specific information. The display of the detailed consumption of service and of the number of operations realised each month could support the recommendation of a given package. In this case the observation of the first trials led to the statement of the importance of developing new electronic tools. The results

created a cognitive conflict by invalidating the first representation of the selling process.

This cognitive conflict appeared to be anchored in the individual. Only the individual may feel the threats of unexpected results. Only the individual will react because he/she is supposed to achieve quantitative and qualitative goals. This suggests that the cognitive conflict is strongly anchored in the way the organisation defined the goals and purposes to the individual. It suggested also that in a given situation not all the actors of the organisation will react. Only those who are concerned by the non forecast results will react. In the case of retailing, the purchase manager of non-food products reacted because his results were threatened by the development of non-food competitors. The existence of a non-food purchase department put the individual in a position to react. Therefore, it could be concluded the individual reactions are strongly anchored in the individual personality, their own past and individual purpose, but also to their position in the organisation through the quantitative and qualitative goals they must achieve.

The cognitive conflict resulted in the production of an alternative proposition of action. In order to reduce the cognitive conflict, the individual will interpret the situation and provide a solution related to this interpretation. This interpretation is strongly linked to the individual situation. By selecting information and linking it to individual experience and purpose, the actor will design a solution which is expected to solve the encountered problem. Because it is anchored in the individual position, it remained partly uncertain and impossible to implement within the organisation. As a result, the individual tried to test his first explanations and solutions through more or less formal conversations with other individuals. Through informal discussions, the reasons of the conflict are developed and implicitly tested. The positive opinion of the other members will reinforce the expression of the solution.

But most of the time, those informal discussions have led to the modification of the initial framework. The reason for this change is, as we said, that each individual had a perception of a problem which is anchored in his own context. As result of the conversations, the individual acquired a more comprehensive view of the conflict and of the ways which should be used to solve it by crossing his perception of the problem with the other people. The expression of a disagreement, the discussions with the other people and the collection of information in order to back the reasoning, led to formulation of an alternative representation or solution which

should provide better results.

These dialogues led to the explicitation of the alternatives. In the case of retailing, the dialogues resulted in the drawing of a first map of the universe concept. This initial draft displayed the shelves in the shopping area and provided a good basis for the sharing of the initial ideas. In the case of banking, the writing of the procedures provided discussions on the invoicing process described above. The explicitation as a support of the discussions and contributions is at the centre of the development process. Without such formal presentation of the ideas, people can not react and thus can not contribute to the improvement of the draft by the addition of their own knowledge on the first ideas. Without explicitation, the initial ideas can not progress.

At the same time, this progression led to the transformation of the initial ideas. Therefore, the explicitation of the ideas realised at this stage did not correspond to their definitive adoption. The bank manager in charge of the writing of the procedures, justified with this reason keeping the computer department out of this stage. In writing the procedures into the programs, the computer department fixes the initial draft and does not allow the other actors to incorporate their own reactions to them. An early inclusion of the computer department in the development process could lead to unsatisfactory solutions. The explicitation must support the emergence of ideas by integrating the remarks, comments and objections made by different actors. Thus it must remain open to change, to new ideas and to any contribution.

These initial frameworks, drafts and sketches were produced by the middle management rather than by the general management. Its intervention would have led to the adoption of the ideas without any discussions. During this stage, the general management remained silent about the choices, options and debates that were proposed and discussed by the actors. Because the decisions were explicit but produced by the middle management, they were perceived as being non-official. This provided the possibility for the actors to contribute to their improvement and their modification.

During this stage the choice of the actors involved impacted greatly on the solutions adopted. Because the options are decided through the confrontation of ideas, the staff excluded from the discussion process could not contribute to the improvement of the initial ideas. They could

not share their knowledge. This led in the two cases to launch delays. For the reasons explained above, the computer department were not associated with the initial discussions. The organisation wanted to develop the programs at the end of the process, when all the procedures had been formally written and adopted. As a result, the development team discovered new problems in the two cases. For the bank, the initial launch date had to be delayed due to the time required to develop the programs. Because of the late integration of the department in the development, over optimistic deadlines were adopted. Due to their exclusion from the reflection, the department's competencies were not been integrated into the development process. Similarly for the retailer, the development team discovered at the end of the process that the change of categories involved rewriting the entire computer program. As a consequence, all the reporting systems based on gap analysis were threatened. The computer department had first to write the program, then to measure the results during one year and finally may produce comparisons. This process delayed the launch by one year. It could have been avoided if the computer department had been consulted earlier on the consequences of the "universe concept". Their exclusion from the first development stages made the integration of their competencies in the project impossible.

After the explicitation of the initial ideas and their successive modifications, learning sequence may include a formal test which aims at validating the effect of new choices. Because of its costs and duration, the test will be triggered when the question to solve is perceived as uncertain. Only when the contributions of actors can't reduce the uncertainty, the recourse to a validation of hypothesis becomes necessary. Different testing means was used from the most simple to the full implementation. First informal reactions of external individuals are often used in order to obtain a first feedback. The individuals may be either specialists of another domain and/or colleagues working in different markets and/or personal relations. These ways of enriching the visions of the propositions. Their use provided insightful comments at very low costs. The richness of these informal validations relies mainly on the quantitative and qualitative importance of the individual, social and professional network.

The second testing procedures are the qualitative and quantitative methodologies often used in the market surveys. They have been used in order to formally validate the choices. Nevertheless their use required the implementation of solutions which can be problematic.

The bank tested the ways of selling the packages by simulating 50 sales with 50 current consumers. This test required providing a first design of the entire packages, training the salespersons, finding 50 consumers and selling the packages in order to measure their reactions. This procedure, due to the intangible aspects of the service, remains difficult to implement. It presented many biases. For example, it was not said to the client that the selling process was a test. However, the salesperson, who knows the customer individually, can't play an entire wrong character. To the problems of interpersonal relations, one must add the problems of the simulation of infrastructures. The implementation of a test of the "universe concept" in one hypermarket required removing 5 000 m² of sales area. This induced indirectly a risk on the existing turnover, which represents 30 to 50 million francs every month. In such conditions, a test must be considered as a full implementation in itself.

These conditions made the testing of alternative solutions or options very difficult. This reduced choice of testing must face the dreadful complexity of service offers. A single shelf may display more than 500 different products over multiple disposals. The content of a single package regrouped more than 10 financial products, some of them being very complex. The result is that, even in the case of formal tests, it is hardly impossible to validate all the detailed offers and options. Unlike the case of products, it is impossible to validate each of the service's attributes by testing them extensively. Therefore, the managers created the offer by using the process of conversations and confrontations described above. When this offer appeared to be well built internally, a formal test was realised, not in the perspective of creating the offer, but with the purpose of confirming the choices made internally. The result of the tests confirmed the choices in the two cases. When confirmed, a positive decision of launching ensued.

Then the next stage of the learning sequence is the formal writing of the interaction procedures, which is achieved by many means. An extensive description of the delivery processes may be done. In the case of the bank, a guide of procedure has been written. It consists of 70 pages of an accurate and meticulous description of the different operations that are possible to realise in each package. It also detailed different scenarios which must occur in given cases as the negative or positive situation of an account. The writing used the form: "if this situation occurs then the information system must do this action". Given the number and complexity of the different financial products, a large number of scenarios were written. This

stage lasted around one year and half.

The writing of the procedures may also be achieved through the use of the infrastructure. In the case of retailing, the interaction procedures are defined by the way the sales area is organised. Therefore, the development resulted in a written document that described the new categories of products extensively and provided a list of the products for each category. In this case, the way the products were displayed remains to be defined by each store. This choice resulted in a second learning process. Our observations revealed that a similar learning sequence occurred at the level of the four stores where we investigated.

This learning sequence, achieved through multiple reasoning, explanations, formalisation and progressive redesign of the initial ideas resulted in a definition of the offer. In both cases, this definition was done by multiple means. First, the description of the interaction process was done through the use of written scenarios for the bank and by the publication of a list of categories and product for the retailer. Second, the procedures were integrated into the information system by programming the scenarios or the categories. Consequently, the definition of the goals, the analysis of the results, the analysis of the client behaviour is modified according to the new processes. Third the behaviour of the individual is transformed. The bank trained the sales person in order to define the new goals, the expected behaviour and the means, which will be used in order to achieve the goals. The retailer redesigned the organisation of the purchase department and of each store by separating the job between the new categories of products. The result of the learning sequences is the transformation of the entire process of interaction with the client. Thus it required modifying the entire system, from the individual behaviour to the organisation's overall purpose.

In order to complete the sequence of learning, we added the level of the occurrence of each stage as described in figure n°40. Four different levels were identified. We observed first that the cognitive conflicts occurred at the individual level. Even if they resulted from a collective action or decision, we observed that the cognitive conflicts resulted from the contradiction between a proposal and the competencies and experience of the individual.

Then our statements revealed that the expression of the individual disagreement is made at a collective level. First, it is expressed at the group level, if we defined by group either by the

department or by the personal network. This level is favoured because it provided multiple occasions to test the objections with no risk. Nevertheless, the limit between the group and the organisation level is not so clearly delineated. In some cases, the sharing of a disagreement may be done across the borders of the department or of the personal network. The level of the organisation referred to all the interactions which occurred across the borders of the sub-entities of the companies (departments, stores, agencies, functional department, etc...).

To those levels, we added the stage of the organisation including the client and the external actors. As we described before, when the solutions adopted remained uncertain, they had to be tested in order to validate the hypothesis. In those cases, the testing procedures appeared to be more formal due to the involvement of multiple actors. They entailed to create a specific protocol and required multiple means to be performed. Thus we distinguished them from the internal test involving the groups or the organisation.

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2.2.5. Conclusions

It is impossible to understand the unpredictability of the course of an innovation without understanding that the development teams have to face the fundamental uncertainty of the process. As the final solution is not known, it is impossible to make a choice on the basis of a previous experiment. At the beginning of the development the only certainty is the existence of an unsatisfactory situation, resulting from the internal or external context. Neither the internal acceptance of a given solution nor the customer reactions to the offer are possible to identify for the main reason that the new offer does not exist. Our observations emphasised that by successive reactions, the actors created a new set of procedures, rules and means in order to solve the initial gap between expectations and results. By the use of multiple means, the actors design each pieces of the process progressively.

3. VALIDATION AND INTERESTS OF THE ORGANISATIONAL LEARNING MODELS FOR THE NEW SERVICE DEVELOPMENT.

Given the observations realised all along the two development processes, we intend now to discuss from the interest of the learning models of Crossan and Al (1999) model and Nonaka (1994) model in order to validate their interest for service innovation. Then we intend to summarise the statements into the proposition of a service innovation model based on the organisational learning process. A discussion on the further research and the managerial involvement will ensue from those assertions.

3.1. NEW SERVICE DEVELOPMENT ACHIEVED BY A LEARNING PROCESS

Though it provided first empirical observations, the review of the existing research focused on the service innovation revealed the lack of theoretical models that could explain the observations. The statement of a non-formalised process, resulting in the transformation of the organisation, was insufficient to understand the dynamic of the development. The attempt to understand the success and failure factors by listing all the potential criteria underlined the « overall synergies » as being one of the major contributors for success. Nevertheless, this statement did not explain the reason why this factor appeared to support the innovation process. Further study of the nature of the service delivery and the review of the organisational learning models provided a first theoretical model that could fit with the initial empirical statements. The development of new services should be considered as being an organisational learning process. None of the first empirical statements seemed to infirm this thesis. The adoption of the model contributes explaining the observations. Moreover, it provided an integrative frame that contributes linking the results previously observed.

Nevertheless the lack of in-depth and longitudinal research did not provide the data that could confirm the relevance of the model. This was the purpose of the empirical part of this work. In order to demonstrate our statement, we used a comparative case study methodology. Such a methodological choice is well admitted when its purpose is to validate the relevance of a

theory in order to explain observations and statements as said by M Hlady-Ripal (2000)²⁶⁵: “This methodology <the case study> is particularly interesting when the existing theories are uncompleted or provide only a weak insight on the phenomenon”. The methodology provided in depth observations that highlighted the relevancy of the organisational learning framework.

It may be asserted that for our two cases, this theoretical frame provided a good explanation of the existence and nature of the development process. The nature of the different stages could be defined as learning actions such as making sense, testing, transforming results into routinised behaviours. The origin of the development may be founded in cognitive conflicts encountered by the individual when they analyse the fit between the organisational behaviours and the environment. The production of alternative solutions appeared to be anchored in interpretation and sensemaking processes. Most of the decisions which were taken could be easily explained as being the result of learning. The overall duration of the development is strongly linked to the time devoted to learning. We intend now to summarise and detail the observations of the N.S.D (New Service Development). Then we will discuss how they fit with the existing model.

3.1.1. N.S.D. as a result of cognitive conflicts.

We observed that the beginning of the two processes have been triggered by the change in the economic context which was expected to produce bad results. This fits well with the learning models, which asserted that the learning process is triggered by unexpected results. We can conclude that the observations confirmed in the two cases the relevance of this theoretical vision. The innovation processes have been triggered by unexpected results. Because the environment raised questions that can't be solved with the existing solutions, the two developments were initiated and resulted in the two innovations.

This statement is reinforced by the study of the learning stages we observed. Each time a learning loop occurred in the development process, it may be observed that it was triggered by a cognitive conflict. In the course of ongoing tasks, the occurrence of unexpected problems

²⁶⁵ HLADY-RISPAL, M., (2000), “Une stratégie de recherche en gestion: l'étude de cas”, *Revue Française de Gestion*, Janvier Février, pp 61-79.

invalidates the way the people performed the process. This resulted in the inadequacy of the actual representations. What we called the cognitive conflicts is this inadequacy between the actor's tacit and explicit inferences and the results of their actions. Nevertheless a closer study of what we called the cognitive conflicts revealed a lot of different cases.

The cognitive conflicts occurred at the individual level right through the development process. We identified five main reasons for their emergence. We intend to list each of them and then to discuss what we called an "event" which triggered the cognitive conflict in the organisation.

First, the theoretical frameworks previously reviewed before asserted that cognitive conflicts may ensue from day to day routines each time they produce a lot of unexpected results. The customers may behave surprisingly. The individual producing a process may change its habits by intent or by error. The occurrence of unexpected events during the delivery may change the process itself. Those random episodes will lead to cognitive conflicts that will be solved either by considering it as random event or by the adaptation of the behaviour. In the first case the event is considered as having no signification and forgotten. In the second, the event is used as an observation that can be used in the building of a new interpretation. Our observations identified none of those events as being at the beginning of the innovation process. Instead of this, we observed that the people reacted to the increasing pressure of the external competition. The rise of competitor's market share, the change of the legal rules induced a reaction. The people who were the most concerned by the threat supported this reaction. It took the form of a cognitive conflict: "if we keep on the current way of doing, we will produce counter performances". This statement, which remains to be validated, resulted in a new learning cycle. This statement does not mean that the cognitive conflicts are necessarily linked to external events. The longitudinal exam revealed that they occurred all along the development and whatever the hierarchic level may be. Nevertheless, whatever the events might be, internal or external, they could be considered as being the dynamic of the development.

Second, the cognitive conflict may be anchored in the divergence between what is done in order to solve a problem and the existing methodologies. In this case, what makes a problem is not the outcome of an action but the inadequacy of the methodologies used to solve a

problem with the tacit and explicit procedures. The cognitive conflict is the result of a discrepancy between what has been learned from the previous experience and what is actually performed. In the bank we gave the example of the choice of a methodology for the survey. Due to its individual aspect, it may be considered as being very similar to the first one. But we would like to emphasise that the conflict with existing methodologies is not only anchored in the individual. The information system is another means used to memorise the procedures and methodologies adopted to perform tasks. Therefore, though the cognitive conflict remains individual, it can find its source in the discrepancy existing between the organisational procedures previously learned and memorised and the actual methodologies. In the case of the retailer, the warehouse's reengineering demonstrated that the new procedures, the new shelf disposal, created multiple cognitive conflicts linked to the procedures of the goods management. All the stores have adopted the final result, a complete reorganisation of the warehouse in order to keep both the same goods management's procedures and the new shelf disposal. —

Third, the cognitive conflicts may result from the divergence between many actors. Due to their respective and localised experiences, the organisation's members will produce a different interpretation of the same event. The divergence of the interpretations, stated through the discussions and confrontations, will induce the possibility of a cognitive conflict. We observed that this situation may occur due to organised discussions such as meetings or working groups. But they can also result from the informal contacts. Most of the time, it is related by our interviews that they tried to influence the events by sharing their point of view with other organisation's members through informal discussions. This kind of behaviour seemed to be clearly originated in the perception of a gap between the choices and the perceptions of the individual. When the cognitive conflicts resulting from the individual experience are impossible to plan, their social dimension may be explicitly organised in a given purpose. By planning the meeting of different actors having different knowledge, history, know-how and intent, it is possible to raise new cognitive conflicts and therefore to acquire a more accurate view of the problems resulting from the change.

Fourth, the cognitive conflicts may result from the divergence between the existing solutions and the individual intent. The simple view of an individual with no personal intent should not be considered as realistic. Our observations revealed that the gap between the existing

situation and one individual intent may create the cognitive conflict. By intent we refer to the individual who aims at a given position in the structure through the achievement of an action. The re-organisation of the categories of products provided an interesting mean for the purchasing manager to increase its weight against the stores in purchasing process. As the development induced a new organisation chart, it was possible to renew the place of the purchasing department in the day to day functioning. The perception of a gap between the way the organisation worked and the position that the actor should have in order to improve the results may constitute the cognitive gap. This means that innovation and learning has also to do with the position in the structure. One possible game to improve the power and rank of the individual and groups is the transformation of the existing rules through innovation. This doesn't mean that the struggle for the achievement of a position may be considered as a source of innovation. It is only asserted here that the difference between a given position and the one, which is wished, must be considered as one source of a cognitive conflict.

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Fifth and similarly with the fourth statement, the cognitive conflicts may result from the divergence between the individual actions and the overall organisational intent. In this case, the individual is perfectly satisfied with the results of the actions he performed. But he can state that what the organisation expected was not this result but another one. This case occurred very frequently during the end of the innovation process, when the general management decided to extend a given process to the entire organisation. This case means that the staff must abandon a part of what has been previously learned from the experience. This situation raised most of the resistance to change from the distribution network. Changing the procedures means devoting a lot of time to it and therefore accepting this investment in terms of time and energy. All the department managers underlined the time devoted to the transformation of the shelves disposal, to the learning of the new categories of products and to the reengineering of the warehouse. This discrepancy between the previous situation made up of tacit and fast procedures produced satisfactory results and the new ones where most situations must be slowly explored created many cognitive conflicts.

In conclusion, it must be stated that the cognitive conflicts occurred right through the development process. Each time the individual tried to achieve a purpose, the unexpected results may have invalidated the initial frame of thinking. As far as the innovation is concerned, the cognitive conflicts resulted in two main outputs. The first of them is the

transformation of the routines - into an explicit set of rules and procedures. The explicitation refers clearly to the learning theory. The second of them is the production of a new representation of a given situation, anchored into the individual intuitions. We will develop those two points in the following chapters.

3.1.2. N.S.D. as a process of explicitation of the routines

It is asserted by the cognitive psychology that the learning requires the transformation of the existing tacit knowledge into an explicit body of rules and procedures. The creation of a new process is clearly achieved with the use of multiple means aiming at the explicitation of the processes. The first means are linked to the explicitation of the processes by the writing of the procedures. This has been achieved in the bank by the writing of multiple scenarios. For each package, the scenario described the nature of the financial products that are offered. It also described the interaction process through the accurate description of each stage, of who supported it, of the kind of document which must be send or produced, of the invoicing process. Those scenarios also included multiple options resulting from the specific conditions. “What happens if.....” is the main reasoning which supports this part of the scenarios. The written description of each possible scenario, the formalisation of the different segment of products, the actors defined explicitly each stage of the offer. The final offer is extensively written and explicitly detailed, before being given to the computer department.

The second way used to materialise the process is the documents presented during the formal meetings, which aimed at the agreement of the project. In the case of the bank, many presentations were made to the commercial board in order to obtain a formal validation of one option. In this case, transparencies and written reports given in advance provided the description of what remained to be agreed. Those written documents aimed at two purposes. First they provide the sole way to formally validating the adoption or not of each procedure. Second, they provided the sole possible way to discuss, confront, and therefore to share the ideas. By making explicit the scenarios, it became possible to obtain an opinion or advice from the other members of the organisation. It also became possible to ask to the other members to build their own contribution in the delivery process. The participants in order to discuss the options and take a common collective decision used those documents. Because

they involved multiple actors, indirectly concerned by the project, the formal meetings required a great level of descriptions and explanations of the project. Because they resulted in multiple discussions, participants often enriched the initial visions of one problem. New purposes and schedules were proposed. As a result, and because they entailed a greater formalisation, the formal meetings contributed to the effective writing of the processes and scenarios.

The third way of explicitation is the conversation process. It occurred throughout the development process, either formally during the meetings or through the informal contacts. This process is a part of the continuous flow of the social contacts. Consequently, it is strongly rooted in the existing social networks. The groups supporting the conversation process may be formal as the departments, the development groups or the well-known networks of experts. But they may also be less formal such as the community of practitioners or even the informal chats resulting from a random encounter. The building of the new categories of products that resulted in the final « universe concept » has been achieved through the use of both written documents and conversations. First, the development group, which was made up of the actors involved at all the level of the organisation including a consultant, presented a first draft of the category's content. This has been achieved through a series of discussions and written on a final report. Then the project manager used this first description in order to make a simulation of the weight of each category. This was made in order to produce balanced “ universes ” in terms of turnover but also in terms of the number of people to manage. The final result was presented to the entire group of the stores managers in order to validate the choices. Again, written documents has been created in order to support the discussion. Then during the meeting, the verbal exchange provided the way to share the ideas, to integrate unexpected objections and to obtain a final validation of the project. Then another written description of the project was created in order to support the implementation of a test in one store. In this case, neither the initial ideas nor the final issue could have been implemented without the written and verbal explicitation of the knowledge of each participant.

The late involvement of the two computer departments reinforced the statement of the central role of the procedure's explicitation supported by the social relations. In both retailer and bank cases, the computer departments had not been included in the development process, and had very little information on the project. This particular place is reinforced by the geographic

situation of both of them. In the case of the retailer, the computer department was located in the east part of France, far from any stores or from the head office. In the case of the bank, for security reasons, the computer department was implemented on the last floor of a building. Its access necessitated taking a separate entrance, to go through multiple security doors, which required using an electronic pass. Thus, compared to the immediate access of the other offices, the building and security reasons prevent the informal contacts and an easy exchange of information. Due to those reasons but also to the will to avoid fast “freezing” in the procedures as described before, the two projects went on with a very low involvement of the computer managers. When the explicitation occurred near the end of the process, the organisations discovered that the programming was more complicated than expected. As consequence, the planning had to be cancelled. In the case of the bank this delay represented more than seven months of computer programming when it lasted more than one year in the case of retailer. An earlier involvement in the social networks would have resulted in earlier explicitation_ of the programming constraints and know-how. As a consequence, it may be hypothesised that the achievement of a better planning for the two projects would have been achieved. The explicitation means, achieved through written documents and conversation, and supported by the social networks, resulted in the creation of new scenarios which integrated the constraints of each of the actors. As a consequence, it must be said that they result in new knowledge.

3.1.3. N.S.D. as an interpretation process.

The result of the cognitive conflict is that new interpretation frames must be produced in order to achieve the expectations. This means in this case that the “routinised” action is invalidated. The individual behaviours have to be redesigned in each detail to order to produce new outcomes. The theoretical frame of learning asserts that the individual will produce new interpretations on the basis of its own intuitions. As said before, Weick (1995) described them as: “ the preconscious recognition of patterns and/or possibilities inherent in a personal stream of experience ”. In itself, such an “ event ” is nearly impossible to identify. Because of the “ preconscious ” functioning of the individual mind in this stage, interviews could not provide a valid answer to the question. Because of the tacit aspect of the problem-recognition process, its verbal transmission will be nearly impossible to achieve. This question overcomes the means we can devote to the building of a case study.

The only way we tried to observe this stage was to test if the individual interpretations of the same phenomena diverge or not. The positive answer means that the production of an interpretation is anchored in the individual history and position in the structure rather than being the result of a logical deduction of the facts. But even if the interpretation diverges, it may not be asserted that this difference may result from the individual intuition or from another cause. Nevertheless, the kind of interpretations adopted may reveal the links with the individual experience.

The observations collected by different means and sources confirmed the divergence of the interpretations. Speaking from the same events, the individual provided their own perspectives and revealed new approaches that were linked to their position in the structure and to their own know-how. Moreover, the observations revealed the crucial role of the divergence in the innovative process. Because the divergence of the interpretation resulted in the production of multiple and partially contradictory assertions, it is possible to provide to a given situation another sense and therefore to adapt a new behaviour. The production of multiple interpretations opened the scope of the potential answers to a cognitive conflict. They enrich the potential meaning of an ambiguous event.

This production of interpretations, inferences and « hypothesis » appeared to be linked to the uncertainty of the situations. They resulted from the feeling that the existing explanations of one problem are not adapted to the observations. The general management used the uncertainty in order to enrich the perceptions of the problem. By avoiding to give an intent too rapidly, they pushed the middle management into the production of multiple interpretations. This has been done consciously in both cases with an effective result. The entire set of inferences resulting from this choice has been used in both cases in order to support the innovative processes.

Nevertheless, the sole divergence in the interpretation is not sufficient in itself to account for the decisions taken during the development. First, the adoption of one interpretation extracted from the set of interpretations could be the result of group effects. Second, the adoption of an inference that would not be tested could not relate from learning. It may be the result of a random choice. In such a perspective, the process of innovation must integrate the testing of the individual assumptions. This suggests that during the development testing procedures must follow the production of interpretations, resulting from the cognitive conflicts. This has been confirmed by the observations.

3.1.3. N.S.D. as a process of testing the interpretations.

The observations confirmed that the testing of the inferences or interpretations is done throughout the process as developed in the previous chapter (see fig. 11). The first statement that must be underlined is the number and diversity of the actions that will contribute to testing the interpretations. They could be formal, such as be an organised search of information. But they could also be informal as most of the inter-individual conversations which aimed at testing the assumptions by submitting them to well-skilled colleagues. They could be time consuming like the extensive market survey. But they could also be done very fast as during informal simulations. They could be achieved by implementing the potential solutions. But they can be single confrontations of ideas. In the two cases, they occurred at all the levels we observed. They also occurred right through the process in all those forms.

Their adoption, far from being explicit, is adopted tacitly. The questioning of the respondents

about the choices of one method rather than another one did not provide very clear answers. Many reasons should be hypothesised. First, the previous experiment may be the reason for the adoption. This reason explained why the marketing managers of the bank implemented an extensive survey that lasted more than one year. To this reason it must be added the feeling of uncertainty. Each time the perceived uncertainty is important, we noticed that the testing procedures became more formal. To this reason one must add the pressures on the budget and on the time. When the project arrived at its last stages, the time pressure increased with resulting in the use of fast and informal ways testing the assumptions and choices. Finally one can hypothesise that the perceived importance of the project should contribute to the adoption of a specific means. When the bank manager had to validate the choice of invoicing, she only submitted her ideas to the general manager who adopted one solution on the basis of his own experience. Because the process of testing results in better decisions, the factors that conditioned the adoption of one of the potential means requires further research.

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Considering the NSD as a process of validation the interpretations means that the main stages and actions of the development are made of formal and informal tests. This is true in terms of time but also in terms of budget. The writing of the new procedures by the bank manager lasted more than one year. Most of this time consisted of formal and informal meetings during which, she could confront the ideas and first choices with the other members of the organisation. Once the ideas were validated, it was possible to adopt them. Given the number and the details of those procedures ---The initial procedure's book contained more than seventy pages ---, the testing of the choices took longer than their formal writing. This is also true for the budget. When the store manager of Cora, who initiated the first implementations, decided to test the ideas in his store, he has been obliged to remove more than 4 000 m² of the commercial area. He also took a risk on more than 350 million turnover realised each year by the non-food products.

This observation led to the dilemma encountered by the project managers in the two cases. The reduction of the risks was achieved by the testing of the interpretations. But this action took time and consumed budget. As a consequence, the project manager, who aims at decreasing the risk as far as possible, will increase being late on the market or not being profitable. Therefore, the dilemma is « uncertainty in the launching » against « being late on the market and/or being non profitable ». At the beginning of the development all the potential

choices and their consequences remained mainly uncertain. However, the firm had not yet spent time and money. At the launching, the firm reduced the uncertainty by testing the assumptions. However, this was achieved through an investment of time and money that prevented further testing.

This constitutes the limits of the interpretation's testing process. Given the cost and the time required by the testing, it is impossible to produce formal validation of the entire scope of decisions that have been taken through out the development. The productivity constraints means that the project manager should select the means of testing according to the level of risk, time and budget that are accepted by the management.

Nevertheless, the sole testing of the interpretations and choices could not lead to the conclusion of learning. For example, the information gathered from the tests may be wrongly interpreted by by some members of the organisation or even they could be ignored, deliberately or not. Thus this means that it is impossible to conclude from tests that the information could lead to change effectively the behaviours. This is why the theoretical models of learning emphasised that the transformation of the behaviour must be stated in order to conclude on learning. This means four our research, that the development must result in a new set of procedures and rules that are implemented within the organisation in order to be able to conclude to O.L.

3.1.4. N.S.D. as a process of implementation of routines

Our final statement asserted that the new process is due to be institutionalised as the result of the convergence of the representations of the process. Our observations on this point revealed that the convergence produced the conditions for the adoption of the new services. But they also stated that the convergence is also the result of a deliberate intent. It is organised in order to trigger and facilitate the adoption.

The convergence may be observed through the progressive involvement of the different level of the organisation. The first discussions are established between two or three people who had the initial intuitions and will. For Cora, it was the manager in charge of the non-food

purchase, one store manager who initiated the first informal trials and one consultant in the case of the retailing. For the bank, the initiator was the national co-ordinator who participated in the initial sectorial surveys. Then in a second stage a development group tried to integrate in the project the knowledge acquired by each of the team members. During this stage, many interviews reported that the people concerned by the change tried to acquire some information and tried to influence the development process. By doing so the design of the service incorporated more knowledge and therefore resulted in more accurate and efficient solutions. Then in the third stage, the extension of the ideas through formal and informal tests resulted in an extension of the number and quality of the people involved in the design of the service. The positive issues meant that, for each stage, the development incorporated the remarks and objections of the organisational members. This doesn't mean that the point of view of each actor disappeared into a collective thinking. They remained distinct due to the individual experiences, as described above. Nevertheless, the agreement on the project resulted from the integration of the remarks and of the observations and this resulted in what we called the convergence of the project.

The formal adoption of the concept resulted in the use of many means that contributed to the final implementation of the offer. Those means aimed at the information, training, incitement, and motivation of the people in charge of the design of the final offer and of its delivery. Because those means are standardised, they didn't offer any possibilities to be changed by the employees. Because they aim at the achievement of a given behaviour and interaction process, they guide and constrain the behaviour of each part of the organisation. They may be considered as different means used to institutionalise the new processes. Their number and diversity could be analysed as the signal of the uncertainty of the final implementation.

Those means are in great number and used within the two organisations. Their observations increase the definition of what we call the institutionalisation. The means, which have been used in order to constrain the interaction process, are the information meetings, the training of the people, the publication of internal documents and reports describing the service, the redefinition of the individual goals and the measurement of the gaps, the organisation charts, the information system, the furniture and warehouse disposal and the promotional actions. Such a list could seem to be very long. Nevertheless each of those means has been adopted during the implementation of the two services. We would like to emphasise some of them.

First, the information system appeared to be one of the most efficient ways to institutionalise the new service. This is particularly true for the bank. Once the electronic office integrated the offer, the employee is forced to follow the programmed procedure with very few possibilities of adapting them. In this case, the procedures are directly frozen during the programming. The institutionalisation results from the impossibility of producing the service without the computer support. The case of the retailer revealed the same effect of the information system but through another means. In this case, the information system may not be considered as producing the service. It only provides results by categories of products, store by store with a temporal comparison per day, week, month, semester and year. Those figures are used in order to compare the results from one period to another or from one store to another. The criteria of comparability induced the standardisation. To be useful, the results of one department or store must be established on similar basis. As a consequence, the categories of products must be the same. This is also the case for the human organisation that must be similar to be usefully compared. As a result, the information system led to standardising the procedures, the categories of products and the human structures. They constrained the distribution network to adopt similar ways of producing the results. In this sense, they institutionalised the service in the two cases.

Second, the promotional means contributed greatly to the institutionalisation of the service. As they provide an explicit description of the service, they contribute defining accurately the final result and parts of the process. By doing so they created client's expectations and forced the employee and organisation to produce an offer similar to the description. The promotional leaflets have also been used in order to materialise the offer during the initial stages of the development. By exhibiting the content of each category and by providing an embellished view of them, the project manager promulgated the new categories in the mind of the retailer's employees. This presentation supported the test of this new product's arrangement. More generally, as most of the written documents, the promotional leaflets, the posters and the other supports explicit the service. But unlike with the internal documents, the promotional leaflets are not perceived as being easy to change due to their public diffusion. Therefore they contributed more than the other documents to freezing the service specifications and therefore institutionalising it within the organisation.

The third means that must be emphasised, is the routinisation of the processes. These means must be underlined because they appeared as one of the most efficient institutionalisation means and also one of the most unconscious within the organisation. The routinisation of the behaviours occurred each time that the first trials produced satisfactory results. In this case, the people repeated the initial sequence without having to follow a detailed, analytical and step by step process. The memorisation of the sequence resulted in a decrease in the use of the explicit procedures linked to its achievement. What was said by the department co-ordinator²⁶⁶ about the three years necessary to fulfil the requirements of the job is also true for the case of the innovation. After some successful repetitions, the individual goes directly to the right behaviour without having to think of its different steps. By avoiding time consuming mechanisms, the individual performed a faster process. But in this case, he also forgets the detailed processes. This process, that Nonaka and Takeuchi (1995) called the interiorisation, provided one of the most efficient means to institutionalise the new procedures. The transformation of the process into routinised sequences of actions means that their change will be time consuming. A conscious change will decrease the overall efficiency because it requires investing time in the design of a new one. As a consequence, the organisations, which are under the pressure of efficiency, tried to automatically reproduce the adopted procedures required to perform the service. We refer to the automatic reproduction of the procedure as being one kind of institutionalisation because, in this case, the final behaviour is forced by what has been memorised into procedural sequences of knowledge.

The last means used to institutionalise the new service is the social network, made of the individuals who support the delivery process. As the previous one it must be underlined because it is not easily perceived as a mean in itself. It may also be mixed up with the organisational change. The study of the implementation of the “universe” in the stores revealed that the department managers had to co-ordinate their actions with new actors. Rather than remaining specialised within the same department, they had to exchange information and know-how in order to achieve a good performance. Each time this new network did not function, for personal reasons for example, the department managers were less efficient. The repetition of the information sharing through interaction results in the reinforcement of the personal. Because it is easier easy and more convenient to exchange information with one

²⁶⁶ See the declaration pp 28 of this part.

individual rather than another one, the relation will be stabilised and reinforced. As a result, the processes are supported by the existence of well-established relationships between the individuals. Therefore, the social network contributes to institutionalising the new service.

3.1.5. N.S.D. as the transfer of the new routines to other part of the organisation.

Through out the process, the interviewees underlined the importance of the distribution network in the final success. This statement is reinforced by the theoretical approach previously developed. Due to its inseparability, the delivery of a service requires the reproduction of a similar process in each outlet. This statement entails that the transfer of new routines to the other part of the organisation would require a new organisational learning process. Thus, we investigated the way in which the project managers tried to learn from what happens in the distribution network and we tried to understand how the people in the networks implemented the new concepts. Doing so we kept the purpose to identify the transfers of knowledge. Our results revealed convergent statements.

In both cases, the creation of the new services entailed the acquisition of knowledge from the client's reactions. In the cases of new product development, such a test is possible to achieve by testing the product independently from the retailer. In our two cases the service was impossible to separate from the distribution network which delivered it. Testing the packages means selling the packages and therefore involving the sales force in the test. Testing the "universe concept" means implementing a store in order to measure the customer's reactions. As a consequence, in the two cases, the project managers decided to acquire knowledge by implementing the concept in the stores or in the outlets. To do so, they had to carefully describe what was expected from the network. In the case of the bank, the training session of the sales force was organised in order to explain the content of each package and the way expected to sell them to the client. Then the local tests were implemented. Similarly, the implementation of the universe in the first store entailed an accurate and explicit description of the new product's categories made with written documents.

This description was not sufficient for the service to be implemented. In both cases, the people

in charge of the delivery had to learn how to use the new service. In the case of the bank they had to simulate many selling process, to identify the appropriate packages and to answer questions and objections. All this disturbed the existing processes. Because this process entailed inviting the client to the local agency in order to describe the offer, the individual planning was cancelled. Because the administrative and selling tasks are intricate, this deep change in the process involved a re-organisation of the individual job.

Similarly, the implementation of the “universe concept”, even as a test, required another coordination between the department managers. Because some of their products were removed to other shelves according to the new concept, the department managers had to change their routines for the stock’s management and for the filling of the shelves. This new display means that one department manager who stated that a product was missing had to transmit this information to another colleague. This transformed the formal and informal communications. The example of the warehouse’s reengineering we detailed previously provided another illustration of the importance of the local learning in the transfer of process to another part of the organisation. In all those cases the change of the servuction process induced an individual and collective learning process.

In return, the transformation of the delivery procedures at the network level induced a transformation of the initial concept. During the first tests of the packages, the sales persons made important comments about the way it was possible to recommend one package rather than another one. To do so, they need a simulation of the account in order to be able to measure the kind of products which are used, their consumption and the cost of a product for a client, based on those figures. Such a simulation required a specific tool available on each electronic office. Due to those remarks, the project managers obtained changes in the information system in order to produce the expected figures. This feed-back effect of the routine’s transfer to another part of the organisation has been stated many times in the two cases. The change of one part of a system required a learning loop in another part of the system.

One logical conclusion of the local learning as a condition of the service diffusion is that a great diversity is to be expected from one point of delivery to another. If a learning loop occurred in some points of the organisation, then this point must behave differently from the

other parts. Our statements on this point are somewhat contradictory. On the one hand, a great disparity in the local disposal of the shelves has been observed. An in depth analysis of the map of 36 stores revealed that, though the categories were respected, the implementation of each sub category in each of them remained very diverse. Similarly, the way each warehouse were organised differed mostly from one point to another. But on the other hand, some organisational features were adopted similarly in all the distribution outlets. This was the case of the organisation chart in the case of a retailing company. After the initial tests, when the general management decided to adopt and extend the “ universe concept ”, it promulgated the new organisational chart. One decision was to reduce the number of department managers. The explanation given at that time was that some departments became too small to require a full-time job. In the smallest of them, this was true. In the biggest, it was not the case. Nevertheless, this decision was implemented in all the stores.

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Similarly, the information system was designed in order to reproduce the same kind of results in each outlet. Because the report sheets provided interesting comparisons, the structure of the results along with the content of each category remained the same for all the stores. For the same reasons, the electronic office remained the same through out the agency network. In this last case, the individual autonomy remained very weak. The sales person had very few possibilities to adapt their offer to their client. The information system constrained the offer to the point that the local learning, induced by the local variations of the situation could not be integrated within the offer.

Finally, the communication documents restrained the local adaptation of the offer. Many documents are repeatedly produced in order to promote the attractive offers. The retailer created promotional leaflets, displaying the products according to the new categories. The bank advertised the three packages and their content through the multiple supports. In the two cases, the research of economies of scales led the organisations to centralise the communication. Resulting from those efforts, the outlets had to adopt the standardisation of the part of the offer, which was described on the promotion.

This apparent contradiction does not invalidate our conclusions on the local learning. Even if the final result appeared as being standardised, the learning loops occurred during the development. Through out the tests, the discussions and the explorations, the central and local

groups adapted their behaviours through a trial on error process. Then they transmitted what they had learned from the experimentation and in this way influenced the other parts of the organisation. During the implementation stage, this is no more the case, and for the reasons we developed before. The general management need standardised and structured organisational charts. The promotion entails producing common offers and the information systems induced standardised procedures.

Then we must conclude on this point that when the innovation is at the stage of the project, the transfer of procedures from one part of the organisation to another clearly entails a learning process realised at the local level. It must be added that in return, the results of this learning process will trigger the change of the initial procedures. But in the second part of the innovation projects, when the learning process provided efficient solutions to a given problem, then the implementation will be achieved on the basis of a standardised solution that leave few possibilities for exploration and learning. This reinforces the distinction between the two stages of the innovative project. The initial stage is focused on learning and on the progressive integration of what has been learned by the different parts of the organisation. The implementation stage is the one of the transfer of standardised procedures within the distribution network. This transfer requires the occurrence of learning loops that could either support the adoption of a standardised behaviour or aim at the creation of a satisfactory local offer.

3.2. AS CONCLUSION ON OUR HYPOTHESIS.

The review of the development process and the detailed analysis of each of the variable validated our central assumption. **It is possible to conclude that the innovation process is in the two cases achieved by the mean of an organisational learning process.** From their early beginning to their very end, the main events of the development process may be described as being specific stages of learning.

Though the actors did not perceive the development as being a learning process until it is presented so, the OL model explained the behaviours of the people in charge of the development. **The model explains why the innovation process is initiated and the**

conditions that will result in the creation of development groups and projects. Moreover, the model accounts for and explains the kind of tasks performed by the development group such as the production of written documents, the sharing of ideas through discussions, the rewriting and testing of the procedures by different means and the selection of the members of the team.

Our methodological choices, which were based on two comparative case studies, led to the conclusion that the learning process appeared to be the sole point common to the two developments. Their observation revealed that the final offers, the main stages and the information that had been tested differed strongly. The observations confirmed that an innovative project, because its purpose is to renew the existing procedures and rules, is a singular process. Nothing comparable had been produced before, and nothing strictly comparable will be produced after. The only development rules, which may be observed as being reproduced from one development to another, are the means devoted to learning.

Moreover, the O L process explains this major observation: the learning process determined the time to market. Because the development process is made up of the actions of learning, the time devoted to explicit, share, test and formalise the ideas explained the duration of the development stages. Consequently, the factors that had an impact on the organisational learning influenced the development's duration. The two cases revealed that the factors that facilitated or supported learning contributed to shorten the development. The way the groups preserved learning by avoiding a too early programming illustrated this point. On the other hand, the ignorance of the computer constraints proved that a major increase in the planning resulted from the impossibility of learning.

The major conclusion of our research is that the organisational learning framework appeared to be of the first interest in order to link the different observations. The two models of Nonaka and Takeuchi (1995) and of Crossan and Al (1999) explained the progress of the innovation process. The observations we did through out the two processes confirmed that the innovation resulted in the change of the existing and tacit routines. They gave a clear support to the assumption that the creation of new routines is an organisational process that links the individual, group and organisation levels. They revealed that the extension of the individual interpretations and learning is realised through formal and

informal communication means. Finally, it was observed that, after their implementation, the new processes were routinised and therefore became tacit. Consequently, one can conclude on the interest of the two models for the understanding of the service innovation.

3.3. LINKS WITH THE PREVIOUS RESEARCH ON SERVICE INNOVATION.

We previously listed the main articles and tried to link their results with the learning patterns we detailed in the theoretical part of this work. It may be stated that the Organisational Learning theory provides an integrative framework to the existing research. As previously said, Bowers (1989) but also Edgett (1993) and (1996), Scarborough and Lannon (1989) and Scheuing and Johnson (1989) underlined that the theoretical development model, usually adopted for product development, is not systematically driven by the service firms. Moreover, Jallat (1992) demonstrated that the use of the theoretical model did not produced better results than the common routines generally adopted. Salleh and Easingwood (1993) stated that only 18% of the financial companies they interviewed drove a formal market research. This overall statement is easy to explain in the perspective of the organisational learning. The comparisons between the two companies revealed that due to the contexts, to the internal organisation and previous knowledge, the organisational learning process must be singular. Rather than reproducing a standardised process, the learning entail to cope with the local problems in order to find answers closely linked with the contexts and the existing knowledge of the actors. In the perspective of learning, what is to be learned is not included in an overall and normative framework. What causes the problem is not the task in itself. What makes the problem is a given event, which created a cognitive conflict to one individual in a given situation. Eiglier, Langeard and Jallat (1986) supported this statement by observing that, with same diagnostics, competitors developed very differentiated offers and used non-formalised development processes. Due to those reasons, it may be asserted that the apparently non-organised process is linked to the singularity of the learning rather than to random behaviours.

Moreover, Hart and Service (1993) demonstrated that the inter-functional integration in the new service development appeared to be one of the most important factors for success. A quantitative survey realised by Atuahene-Gima (1996) reinforced this initial observation. It is

asserted that the inter-functional teamwork and also *the consumer's' understanding of the service* may be clearly related to the market success. Edgett and Parkinson (1994) made the similar statement of the importance of the intra-organisational involvement and of the integration among departments as being the main factors of success. The work of Raesfeld Meijer, De Ruyter and Cabo (1996) provided further insights on the reason of a failure. They put in evidence that the break in the social relations of some important actors of the organisation resulted in the final failure of the project. If realised independently, those statements are difficult to understand. The Organisational Learning framework provides a better understanding by highlighting the function of the social relations. By exchanging the ideas, the actors may adapt their behaviours to the constraints resulting from the other parts of the organisation. This way they can also create new sequences of interaction with the clients. Therefore, it can be concluded that the social network may have a major influence on the success of the service innovation.

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The importance and interest of the O.L. framework is reinforced by the contribution of the synergies factors in the final success. By comparing successful and unsuccessful companies, Martin and Horne (1993) revealed that the firms which succeeded were found to fit their new services closely to the existing portfolio. A similar statement is done by De Brentani (1989, 1991, 1993). Edgett and Parkinson (1994) reinforced this approach by stating that the synergy of the new service with the market appeared to be one of the two overall success criteria. In themselves those statements are difficult to understand. But they make sense in the perspective of Organisational Learning. The fit with the existing portfolio means that the new service requires a knowledge that already exists. Due to the complex and intangible nature of service, which creates a great level of uncertainties, the overall integration within the existing perceptions, knowledge and frameworks of thinking will facilitate the development and understandings.

Finally, the Organisational Learning framework stated that the innovation process is triggered by cognitive conflicts, which may arise from the external changes or from diverging purposes between the market, the organisation and the individual. By making the statement that the most important source of ideas for innovation are the competitors innovations, Davidson, Watkins and Wright (1989) gave some support to this idea. The latter work of Drew (1995) established that hiring new employees, changing the job descriptions and reward systems and

improving the information system are the main contributors to the service innovation. Those statements are coherent with the Organisational Learning framework. Those multiple observations, statements and validations led to proposing a model of new service development.

3.4. RECONSIDERING THE MAIN STAGES OF THE N.S.D BASED ON THE FINDINGS.

The building of a N.S.D process based on the generalisation of the two developments resulted in two broad schemes detailed in figure n° 35 and n°36. The first one is focused on the constant adjustments, adaptations and feed-back effects that occurred right through the process should appear impossible to summarise in a single model. The decisions on all the parts of the offer do not follow a logical and sequential order. As previously said, they result in non-comparable offers, supported by the creation of devices specific to each sector. The sole common point of those two processes is the statement that the delivering of a new process requires building new knowledge. Though the outputs may strongly differ, the methodology of knowledge building process appeared to be common. Thus, the model of service innovation we can provide is mainly based on this process. Though we proposed three broad stages, it appeared to be continuous, due to the constant flow of interpretation, sharing, adjustment of the entire system. Moreover, the core process of organisational learning relies on each individual, who contribute by producing interpretations, testing them and influencing the development group in order to integrate the results in the final decisions. As a result a model that would suggest a sequential decision-taking process should be far from the reality. Such a lack of clear stage lead to materialising the learning process as an ongoing flow of events. The model of the organisational learning during the new service development, mainly adapted from the one of Crossan and Al (1999), is focused on this part of the innovation. This model provided the main events that will result in the creation of the new knowledge. The perspective that is adopted here is the one of progressive design of the servuction process. It is detailed on figure n°35.

Nevertheless, this model made the implicit assumption that the learning process is supported by the people who interact. This suggests, as previously said, that the learning is influenced by the people who contributed to the existing knowledge. As a result the creation of new services

also relies on the system that produces it. The adoption of the organisational learning as the general frame for N.S.D means that our model should support the descriptions and influences of the system on learning. Because the decisions taken in one part of the organisation impact on its other part, we represented the second model, which focused on the system that interact in order to produce innovation. This model integrates the learning process and adds the system that produced it. This model is described on figure n°36.

3.4.1. The N.S.D. Process: Organisational Learning while Innovating.

The process is divided into three broad segments which are the early stages that result in the creation of the development group, the development of the new process supported by the development group and the implementation of the procedures within the distribution network. The output of each of those three stages must be considered as the result of service innovation considered as an organisational learning process. It is partially detailed in figure n°41 and detailed in the previous chapters.

The adoption of a graphic representation of this process may be somewhat confusing. It suggests that the innovation is achieved by the occurrence of pre-defined stages. The observations revealed that the learning is achieved by an ongoing process, resulting from the constant exchange and confrontation of information, assertions and presentations. Moreover, we stated that the learning process and adjustments lasted until its very end. Thus rather than considering that the development is made of one single flow of sequential events, the development of service innovation must be defined as an ongoing and multiple flow of parallel events that result in multiple sequence of learning. Thus, rather than considering the development as trapped into a process that must lead to an unavoidable result, it must be stated that it remains open, constantly subject to the events that could influence its course.

The process is separated into three broad parts, which result in three very different outputs. First the innovative process begins long before an official development project is decided. Such a decision that entails devoting time and budget must rely on a first set of arguments. The observations revealed that those initial assertions are the result of a first individual and

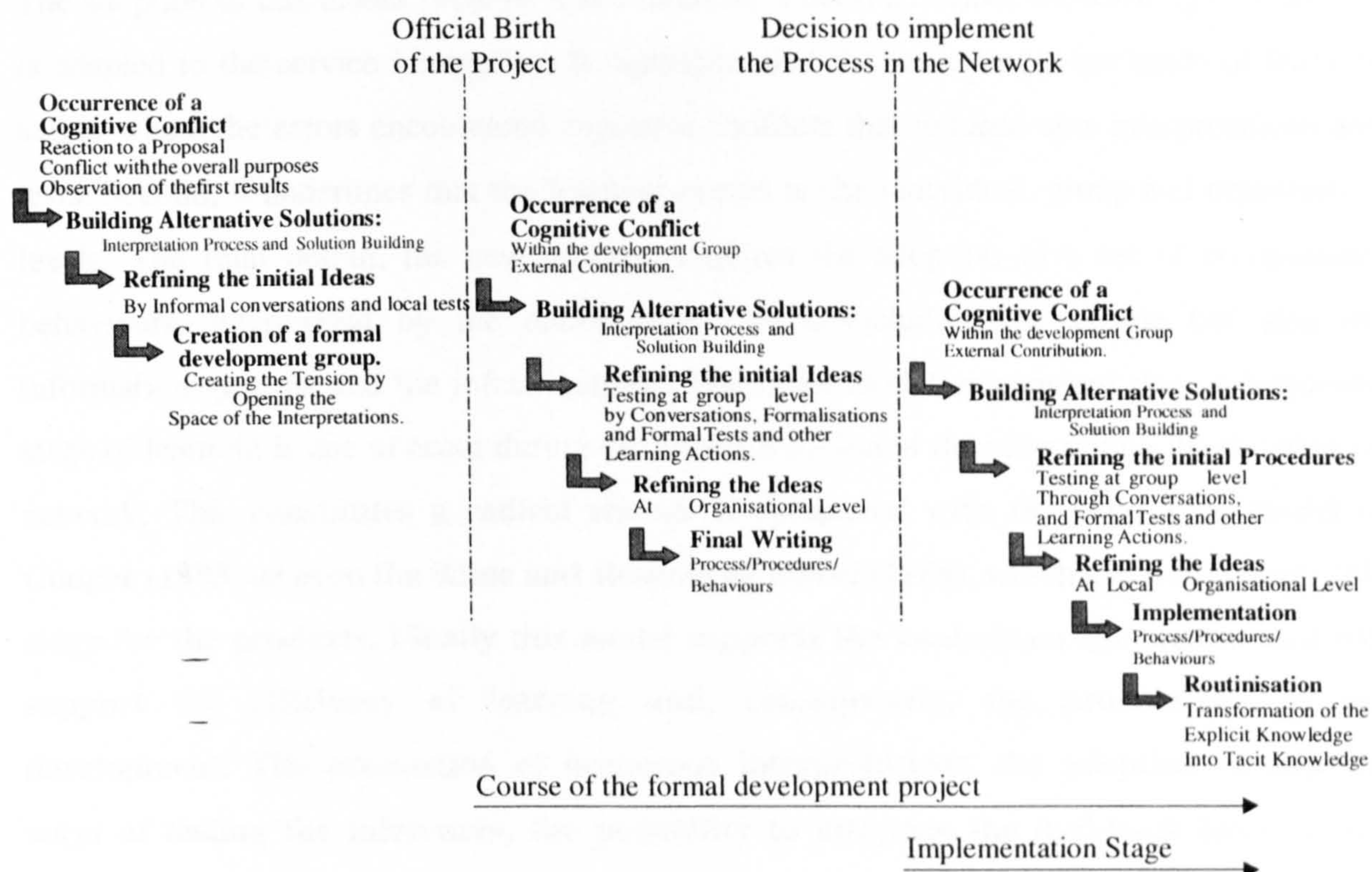
group learning. By being officially supported, they are institutionalised and, therefore, must be considered as a first organisational learning loop. The second part of the development, which is strongly influenced by the initial stages, results in the production of the procedures and rules that must be adopted in order to produce the new service. This development is strongly anchored in the existing knowledge brought by the individual in order to solve the problems encountered. This is so important that the development group is due to change through out the development according to the potential contribution of the individuals. This stage result in procedures and rules but also in the production of the means that are used in order to support the process and to institutionalise it. Nevertheless, and because the processes are produced to the direct contact with the client in varied local context, their implementation appeared to be a third organisational learning loop. The operations have to learn the proposed rules and to adapt them to the local context so that they can be efficient. Then, the service innovation appeared to be the result of those three broad stages that encompass the entire set of events resulting in the offer.

In those three parts a similar process is underway, which links the individual cognitive conflicts to the final output of the stage. In this process, many kinds of actions have been clearly identified. First, the individual, who is faced with cognitive conflict, will try to interpret the reasons that raised the problem. This stage, we call the interpretation stage, led to the production of divergent interpretations, anchored in the individual experience. Though the interpretation can not be considered as being a learning in itself, the production of new representations must be considered as essential in the design of new processes.

Second, the flow of constant and divergent interpretation within the organisation should lead to conflicts of representations between the individuals. Two ways of solving those conflicts have been observed. The first one refers to the previous experience. The solution that fits the best with the positive lessons from the past will be adopted. The second one is based on the testing of the ideas. This test is achieved by the multiple actions of learning that overcome the simple trial and error strategy. Collection of data, informal conversations, formal presentations, simulations are the multiple means that will contribute to modifying, enriching and validating one representation. The final output, which integrates the expertise of the people included in the process, is finally shared by the organisation

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Figure n°41: N.S.D.: The Overall Organisational Learning Process



Third, the output of the interpretation and learning process is institutionalised by multiple means. The formalisation of the procedures and rules that will result in the production of the process will be achieved by the use of the internal communication, of the information system, of the training programs, and eventually by the communication to the final client. This large set of means aims at training and constraining the individual behaviours. The adoption of a pre-determined role in the process will permit the occurrence of an interaction process, made up of the co-ordinated actions of all of the organisational's members.

Fourth, the implementation of the new process will end as soon as the behaviours will be routinised. Due to the pressure of time and productivity, the entire organisation will reproduce them each time the situation is recognised as requiring them. This routinisation provides the mean to avoid the waste of energy, time and budget that are correlated to the constant efforts of interpreting, testing, and building new procedures. The routinisation of the individual behaviours, and therefore of the organisational behaviour, will occur as long as the output

does not trigger cognitive conflicts.

The adoption of this model presents many interests. First it describes the learning process that is adapted to the service innovation. It highlights that the main stages are made of learning stages where the actors encountered cognitive conflicts that induced new interpretations and tests. Second, it underlines that the learning occurs at the individual, group and organisation levels. The final output, the new process, requires the adoption of a set of co-ordinated behaviours, interiorised by the entire organisation, including the people but also the information systems and the infrastructures. Third, the model emphasised that an important stage of learning is due to occur during the implementation of the offer within the distribution network. **This constitutes a radical change if compared with the stage gate model of Cooper (1993) or even the Kline and Rosenberg model (1986), which did not identify this stage for the products.** Finally this model supports the analysis on the factors that will support the efficiency of learning and, consequently, the productivity of the development. The production of numerous interpretations, the adoption of efficient ways of testing the inferences, the possibility to integrate the feed-back loops in the refining of the ideas should contribute, amongst other to improving the N.S.D.

Though it provided a good way to describe the O.L. during the N.S.D., this model does not refer explicitly to the actors of the organisation and to its systemic content. In order to do so, the systemic model of N.S.D. will be adopted.

3.4.2. The systemic model of N.S.D.

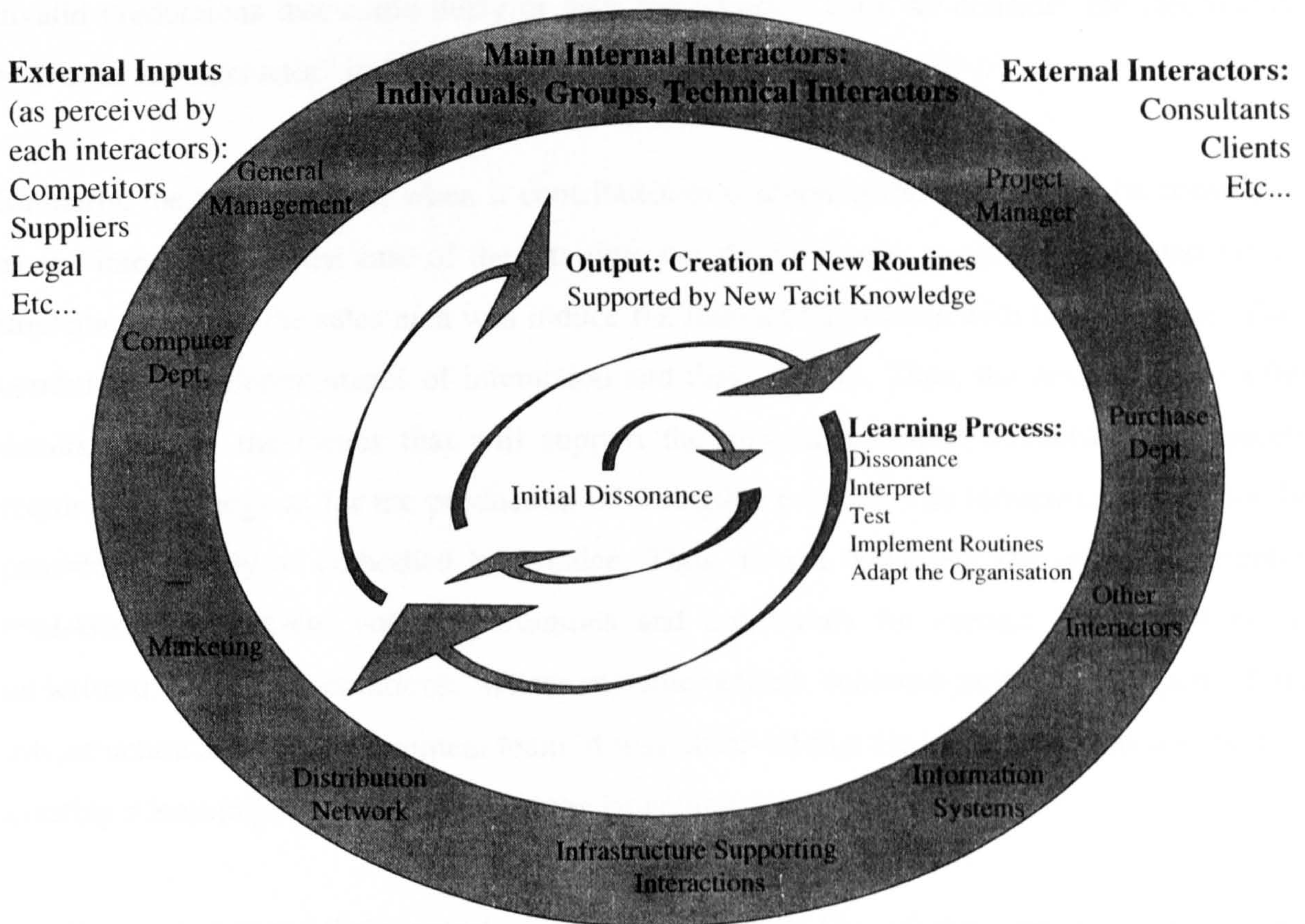
The dynamic of the organisational learning is made up of interactions. That is the reason we created the concept of “interactors” in order to refer to the individuals and groups that created the knowledge by interacting with the other firm’s members. According to the Nonaka and Takeuchi model (1995), it has been observed that the learning is achieved by the confrontations of the individual interpretations of the encountered problems. Moreover, the testing is often realised at the group and the organisation levels. This means that the number and functions of the “interactors” and the way they interact determine the final fit between the offer and the customer’s expectations. Poorly skilled “interactors”, working in a context of

poor interactions are due to undermine the productivity of the development.

The concept of “interactors” is applied either to the individuals or to the groups. This necessitates further explanation. In the sense of learning, the group will be used each time an individual adopted an interpretation commonly shared by a group of individuals. It may be the opinion of the members of a department, which perceived data in a similar way due to their common concern and experience. However, it may also be the opinion of less formal groups, made up of individuals coming from different parts of the organisation. As we observed, the building of a common interpretation may be achieved with the support of the social networks that facilitates the communication.

This suggests that the “interactors” may be external to the organisation. A consultant, a client and an organisation could have a crucial influence on the knowledge building process. The Nonaka and Takeuchi model (1995) does not refer explicitly to the importance of the external “interactors”. Nevertheless, their model supports this assertion because they emphasised the importance of the interactions in the knowledge building process. The integration of knowledge previously acquired by “outsiders” must be considered as an important means of increasing the competencies that can be used by the actors in the development.

Figure n°42: The Interactionist and Systemic Model of N.S.D.



To the “human interactors”, the individuals and groups, we added the technical devices that contribute to the interaction process. This choice may be a surprising one, as the technical devices are generally considered as passive contributors to the processes. However, from the learning point of view, the technical systems represent embodied knowledge. The internal and external individual will use them in order to obtain or transform information, or even to access the offers. The two cases revealed the crucial role of the technical devices in the design of the offers. The managers in the two cases extracted information from the databases and used it in order to design the offers and/or to test the initial hypothesis. This means that during the development, the learning process is dependent on the technical devices that can be uses. This also means that the way the information system is designed, the way it supports the

interactions is of first importance during the design of the offers. From the learning point of view, the information system contributes to learning by interactions as the individual. The lack of interactions, as in the case of individual or groups, will result in discrepancies and invalid productions that could delay or alter the choices. Thus we consider the information system as an “interactor” in itself.

Similarly, the infrastructure, when it contributes to displaying the offers, must be considered as an “interactor”. In the case of the retailing, the shelf’s layout, the choices adopted for the implementation of the sales area will induce the interaction process with the consumer. They condition the different stages of interaction and their content. Thus, the design of new offer entails building the means that will support the new interactions. Mastering this process requires knowledge as for the production of a tangible product. The infrastructures should be considered clearly as embodied knowledge. Thus, it will determine the scope of potential evolutions and present both opportunities and constraints for change. This statement is underlined by the observations. When any interactions occurred between one part of the infrastructure and the development team, it was observed that the negative results necessitated creating a learning loop which delayed the launching.

Finally, we integrated the external context in the model. Though the cognitive conflicts may arise internally, the external context appeared to be in the two cases at the sources of the innovation. Because the individuals interpreted the change in the legal context as a potential threat, they tried to build new offers that could face those changes. Similarly, due to the increase of competitors, the managers tried to design a new offer. To do so, they made inferences about the kind of answer that could be more attractive. The importance of the context revealed that the innovation may be very sensitive to the means devoted to the interpretation of the environment. The nature of the data that are collected, their frequency, the way they are displayed will raise the emergence of new interpretations. One event, which is ignored by one of the firm’s members, can be considered of first importance for another individual who has a different experience. This is not the external environment in itself that matters. What matters is the way the individual interprets and gives sense to the flow of data that surrounds the organisation.

Such a model is not normative. However, it revealed the in depth systemic nature of the

service innovation. It provides an in depth representation of the nature of the service innovations, of the main tasks that will be produced during its course, of the main contributors and of the way each individual, group and technical device contributes to the process. It explains the behaviours of the individual during the two processes we observed. It provided the rational explanations to the first empirical statements. Its overall assumption is that the service innovation requires a systemic approach that includes the entire organisation, including the “human” and “non human” components. A satisfactory learning process entails including in the project the entire scope of “interactors” that will contribute to the final offer.

To emphasise this point, we would like to use the metaphor of the landing plane on an aircraft carrier, developed by Weick and Roberts (1993). Three perspectives may be used to relate from a successful landing sequence. First, it is possible to concentrate on the pilot as being its major contributor. In this case, the individual skills and tasks will be the object of the investigations. The second perspective could argue that it would be impossible for the pilot to land without the help of the desk personnel and of the control tower guidance. The successful landing will be interpreted as being the result of the close co-ordination of many actors to the encountered events. In this case the analysis will integrate the way the people react to the situations and interact in order to synchronise their behaviours. The third level of analysis will add that it is impossible to realise a landing with no instruments. When the position, speed and altitude of the plane is not known, it is impossible for the actors to communicate efficiently and to synchronise the behaviours. In such a perspective, the individual behaviours are co-ordinated by multiple interactions with the other individuals and with the instruments. This third perspective, we called the systemic N.S.D. model, asserts that the successful landing is due to the co-ordination of the entire system, including the cockpit and other “non human” devices.

The observations led to adopting the third perspective in the case of New Service Development. A successful launching relies on the co-ordinated behaviours that is impossible to achieve if some part of the organisation could not support them. Each of the individuals and groups are concerned, including the client. However, the technical devices that contribute to this result should be included as full “interactors” in the offer. This constitutes the “systemic model of N.S.D.”.

This model supported the suggestions for further research and the first managerial recommendations.

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4. OVERALL SYNTHESIS AND CONCLUSION OF THE RESEARCH.

In this conclusion, the results are developed in the perspective of their contribution to existing research on innovation and on management of technology. Because it is now established that knowledge and learning are the central mechanisms of innovation, no difference between services and manufacturing should be relevant. If the central matter of innovation is learning, then the content of learning cannot provide the basis for a theoretical distinction. If technology is defined as knowledge incorporated in the production of offers as said by B Twiss (1995)²⁶⁷ and not as a pure technical artefact, then producing service offers will not differ from manufacturing. In this sense, the repeated observations of learning while innovating made during this research may be taken as a confirmation of this assertion. Nevertheless, the exam of the output of innovative processes disconfirmed the validity of comparisons between services and manufacturing. Many aspects of service innovation lead to establish a clear theoretical distinction with the manufacturing perspective. The content of service innovation will be compared to the one previously described by research. Thus, difference between product and process innovation will be investigated and the contribution of service innovation to those models will be introduced.

Over the past, research on innovation has focused on two broad areas, the products and the processes. On the one hand, as underlined recently by R. Coombs (1999)²⁶⁸: “the predominant concern of innovation scholars have been with the mechanisms and processes involved in the design and development of novel physical goods, and with the role of the R&D in that process”. Within this paradigm, research has been focused on the management of technology and on the links established between technology and sciences. Similarly, public spending for promoting innovation has been focused on the support of new technologies. This approach has been based on the basic statement that the value of an offer is delivered by a physical good, which helps a client to achieve a given purpose. This paradigm has been relevant and useful for the long period where manufacturing contributed to most of the economic value.

²⁶⁷ TWISS, B., (1995), *Managing Technological Innovation*, Pitman Publishing, Fourth Ed, p 5

²⁶⁸ COOMBS, R., (1999), “Innovation in Services, Overcoming the Services-Manufacturing Divide”, in *Nijmegen Lectures on Innovation Management*, Antwerpen, Nijmegen Business School Ed.

On the other hand, research on innovation has investigated the patterns of innovation in processes. It is then considered that new technologies are introduced in the process of production rather than in the products themselves. The investigations tried to analyse and define transformations while producing outputs. In this perspective, the research typically investigated on the factors that facilitate the introduction and adoption of new technology in manufacturing. For example, Jaikumar (1987)²⁶⁹ analysis underlined that continuing pattern of change should be considered as a critical factor in process innovation.

This makes sense for service industries that are process industries. According to Gallouj and Gallouj (1996)²⁷⁰, the technical devices that are incorporated in the service organisations, and specifically the information technologies, represent a higher % of the capital than for the industries. However, the material artefacts could not be considered as the offer itself though they contribute to the performance. In service industries, technology is only a support. Even when it represents huge investments, the focus is put on the creation of satisfactory and replicable processes. This may be considered as taking most of the time and efforts of people involved in the development. Designing interactions organisation-client, formalising procedures and testing the results in order to learn from experience are the core tasks of the developers. The clear know-how of the services companies is the management of processes. In this perspective, Barras (1986, 1990)²⁷¹ demonstrated that an inverse cycle links technology and innovation. Rather than being a source of renewal in the offers, the technologies, specifically information technologies in this research, are adopted in order to produce a more effective process. Only in the second period, the organisations used them in order to innovate.

The results of this research lead to the conclusion that the distinctions established between product innovation and process innovation may vanish in services and could give birth to a third category. The service innovation may occur each time a flow of intangible interactions must be considered as commercial offer in itself²⁷². Due to this intangibility, the

²⁶⁹ JAIKUMAR, R., (1987), "Post Industrial Manufacturing", Harvard Business Review, Nov Dec, pp 69-76, quoted in Managing Innovation, (1997), Tidd, J., Bessant, J., Pavitt, K., Wiley Eds, Chichester.

²⁷⁰ GALLOUJ, C., GALLOUJ, F., (1996), L'innovation dans les services, Economica, Paris.

²⁷¹ BARRAS, R., (1986), "Towards a Theory of Innovation in Services", Research policy, 15, BARRAS, R., (1990), "Interactive innovation in financial and business services: the vanguard of the service revolution", Research Policy, 19, pp 215-237.

²⁷² Those processes may be either standardised or customised according to expectations of each consumer.

characteristics of new service offers never may be considered as embedded into a physical good. Knowledge acquired during the development of innovation is not frozen into a design that warranty reproducibility of performances. **The specificity of service innovation is that, rather than being transformed into material features, knowledge is transformed into organisational features.** After having learned from experimentations, service actors tried to reproduce an expected performance by designing a specific organisation. Knowledge is therefore stored into procedures, formal design, the training of the members, the building of ex-post stories and the information systems. Those means aim at the standardisation of behaviours that are necessary to reproduce some characteristics of the offers. Given service's intangibility, the diffusion within multiple delivery points cannot be based on a material artefact itself. It entails building organisational features that will support the reproduction of a way of interacting with clients. The material artefact that characterises the outputs of manufacturers disappears and with him the distinction established between products and processes. _

By being so defined, Service Innovation differs both from product innovation, where knowledge is embedded into material components, and from process innovation, where the knowledge contributes to improve production of the physical components of output. In this perspective, Service Innovation differs also from the Organisational Innovation as defined by King and Anderson (1995)²⁷³. According to their definition, six criteria must be used in order to separate organisational innovation from other kind of change. Though many of them could be used for Service Innovation, further analysis demonstrated that, though they share common characteristics, those two concepts cannot be merged. First, Service Innovation aims at changing the process or procedures related to the delivery of an offer where organisational innovation encompasses all the potential modifications of processes and procedures. Second, as previously stressed, producing an offer to the client entails incorporating knowledge about the consumer into organisation. However, the proximity of the two concepts emphasised that research on service innovation will contribute to enrich the debate on the relationship between innovation and organisation.

It may be a paradox that the Service Innovation concept contributes to the need of rebuilding

²⁷³ KING, N., ANDERSON, E., (1995), *Innovation and Change in Organisations*, Routledge, London.

the concept of technology as stressed by Orlikowsky (1992)²⁷⁴. To a very large extent, early studies on technologies equated technology and equipment as underlined by Clark and Staunton (1994)²⁷⁵. Nevertheless, as resumed by Quinn and Al (1997)²⁷⁶, it becomes more and more admitted that: “technology is knowledge systematically applied to useful purpose”. This extension contributes to include the concept of knowledge as being at the centre of the debate. According to Quinn and Al (1997), the technology is a way of converting knowledge into definable results under specified circumstances. In this perspective, the concept of technology already encompasses two kinds of fields. First, it may refer to the scientific knowledge embedded into product specifications. This corresponds to the early approaches of technology as mentioned before. Research in that field is very concerned by the R&D economics. Second, it also includes the human know-how that supports the production of outputs. In this field, research is focused on the patterns of adoption and modification of technologies while they are used in manufacturing. In this perspective, Mac Loughlin (1999)²⁷⁷ stated that: “the relationship between technology and organisation must wrestle with the issue of what, if any, definitive independent influence technology has in shaping the organisational behaviour and the organisational outcomes of the technological change.”. In that direction, the social shaping of technology and the influence of new technologies on organisation constitutes the main purpose of research.

²⁷⁴ ORLIKOWSKY, W.J., (1992), “The Duality of Technology: Rethinking the Concept of Technology in Organisations”, *Organizational Science*, 3, pp 398-427: “What is needed is a reconstruction of the concept of technology, which fundamentally re examines our current notions of technology and its role in organisation”, Quoted in Ian Mc Loughlin, *Creative Technological Change*, Routledge, (1999).

²⁷⁵ CLARK, P., STAUNTON, N., (1994), *Innovation in Technology and Organisation*, Routledge, pp 213.

²⁷⁶ QUINN, J.B., BARUCH, J.J., ZIEN, K.A., (1997), *Innovation Explosion: Using Intellect and Software to revolutionise Growth Strategies*, Free Press, New York.

²⁷⁷ McLOUGHLIN, I., (1999), *Creative Technological Change*, Routledge, London.

The current research contributed to extent the concept of technology to a third dimension. The knowledge may be stored into the design of the organisation that becomes able to reproduce what has been learned from experience. Rather than being transformed into physical features, the knowledge is embedded into material and immaterial artefacts. The buildings, outlets, disposal of space, and more broadly procedures, information systems, routines, ex-post rationalisations are the ways service companies used to turn knowledge into actual innovation. The core of service technology encompasses the design of organisation. Many remarks ensue from this central assumption.

First, the huge efforts that have been devoted to explore and understand the role and importance of R&D in innovation processes may be unlikely to produce results in the service area. The discussion organised by J Tidd and Al (1997)²⁷⁸ on the location of R&D within company, on the role of R&D and on the links between innovation strategy and corporate strategy has no sense if such department do not exist. The existence of R&D department relies on the interest of having specialised competences necessary to manage specific knowledge. In the case of service, this competence is more in the organisation of an interaction process supported by many skills and competencies. The development's know-how is similar to the one of the architect. The project manager must gather, associate and integrate multiple competencies and skills. He has to make that each contributor may learn both from clients expectations and from organisational interactions. He must do that each contributor may find an interest in the new process. The innovative service company reinvent the delivery process and therefore the organisation that supports it. This explains why research on the location of R&D, on the funding and investment strategies, on the links with other parts of organisation would not lead to major contribution for services. Such result may appear negative given the amount of research already devoted to R&D function and role. However, the focus on development process reinforced the central assumption of last research on innovation. The process of innovation is a process of learning whatever it may be achieved by a specialised department or by the entire organisation.

Second, given the place of organisational design for innovation, organisational behaviour must be considered as one of the major issue in Service Innovation. Though they failed to

²⁷⁸ TIDD, J., PAVITT, K., BESSANT, J., (1997), Managing Innovation : Integrating technological market and

move directly to this point, the papers initially reviewed demonstrated that adopting organisational concerns for service innovation produced fruitful results. A long tradition of research already established links between organisation studies and “technological” innovation. The extensive review of that field made by McLoughlin (1999) revealed a broad scope of positions and perspectives. On the one hand, research investigated the impact of technology, considered as “neutral”, on organisation. On the other hand, research considered technology as a product of “Human Interpretation”. In the first perspective, technology is investigated from the outside. The final result of previous learning is due to impact on organisation in a sort of a “technological determinism”. In the other position, research investigates within the black box on the way actors create technology. In both cases, it is recognised that an understanding of innovation entails analysing the interdependence of these two variables. The statement that results from this research modifies existing perspectives on this debate. What is given in the case of services is the organisation that prevailed before the innovation. Thus the “technological determinism” has more to do with the resistance to change factors than with the adoption of a new physical good. Rather than speaking from the “technological determinism”, one must speak of the “organisational determinism”. In the case of services, the understanding of innovation processes entails adopting an organisational perspective that may both support and prevent development.

These conclusions supported the third contribution to the research. Given the organisational content of service innovation, development models developed by Kline and Rosenberg (1986)²⁷⁹ and Cooper (1990, 1992, 1993, 1994)²⁸⁰ among others are due to be entirely redesigned from their earliest to their last stages. Most of these models described the initial stages as being the one of “idea generation” or even of “preliminary assessment of potential markets”. This generation is due to be originated by the inputs of engineering, of science on the one hand and on the other hand, by the needs, constraints and requirements of the markets.

organisational change, WILEY Ed, p 133.

²⁷⁹ KLINE, S., ROSENBERG, N., (1986), An overview of Innovation, in LANDAU, F., ROSENBERG, N., Eds, pp 275-305.

²⁸⁰ COOPER, R.G., (1990), “State-gate Systems: A new Tool for Managing new Products”, Business Horizons, Vol 33, 3, May-June.

COOPER, R.G., (1992), “The New Prod System: The Industry Experience”, Journal of Product Innovation Management, Vol 9, pp 113-127

COOPER, R.G., (1993), Winning at new products: Accelerating the Process from Idea to Launch, Cambridge, Addison Westley.

COOPER, R.G., (1994), “Debunking the Myths of New Product Development”, Research Technology

This theoretical frame must integrate organisational factors as being one of those inputs for services. Very early Crozier and Friedberg (1977)²⁸¹ and also Alter (1995)²⁸² identified that the individual may also use innovative behaviour in order to control their position in the structure. This means that the exclusion of the organisational variable will prevent the understanding of the impetus for innovation.

Similarly, for later development stages, research emphasised that generation of ideas is a way of making sense from the internal and external environments, encountered problems and individual positions. This is obtained each time actors may escape from the frameworks that resulted from previous experiments. This is achieved at the strategic level by opening a space for interpretation based on a vision or guiding principles. In the organisational perspective, the testing and offer building rely on the removal of the organisational routines, procedures and rules. Because they are due to prevent diverging interpretations, they prevent from innovative behaviours. Not surprisingly, observations confirmed that the general management opened the scope for interpretation by using visions, vocabulary and vague concepts. By opening this possibility, they let the space for individual divergence and therefore for potential innovation. The managers used the interpretation mechanisms as a very useful mean to support the development.

Moreover, the focus on the ongoing processes reinforced the importance of the sensemaking processes. As said by Weick (1995)²⁸³: “Sensemaking never starts. The reason it never starts is that pure duration never stops. People are always in the middle of things, which become things, only when those same people focus on the past from some point beyond it.”. The observation of the actors “while innovating” revealed that no other guiding principle exists apart the one they interpreted as being the guiding principle. One of them, which is most of the time implicit, is the reproduction of what has been learned previously. This suggests strongly that the normative approach of a linear development, characterised by a flow of successive stages, may no longer be considered as relevant for the Service Innovation.

Management, Vol 37, 4, pp 40-50.

²⁸¹ CROZIER, M., FRIEDBERG, E., (1977), *L'acteur et le système*, Le Seuil, Paris.

²⁸² ALTER, N., (1995), “ Peut on programmer l'innovation ? ”, *Revue Française de Gestion*, Mars Avril Mai, pp 78-86.

²⁸³ WEICK, K.E., (1995), *Op Cit*, pp 43.

At last, the results that have been found on Service Innovation are strongly related to the temporal perspective that is adopted. There is a fundamental difference in considering “innovation” as a finished and close process, as an output, and the “innovating activity” as an ongoing and therefore open process. The major difference between those two perspectives is the recognition of the major place of the uncertainty. Most of the time, the lessons from the past development lead to the conclusion that only the choices that have been made were possible. This excludes the analysis of the way the individual and group build divergent interpretations and achieved convergence of the representations. This may be a major concern in the Service Innovation where the post rationalisation are used in order to reach convergence in the individual and groups behaviours. On the other hand the study of the development “while innovating”, revealed that the scope of the potential decisions remains constantly open. This explains why the lessons from the past are of no use for the innovators. Because the consequences of the alternative choices can not be known until they have been extensively tested and implemented, the uncertainty remains constant until the routinisation of the purchase by the consumer. In this case, the research focuses on the actors of the development. The understanding of their decisions relies on the way they interpret the situations, on the way they reduce the uncertainty.

Given this, the adoption of a temporal perspective entails adopting methodologies that integrate the effects of time. When uncertainty remains open, one must avoid the inferences and generalisations based on a single observation standpoint. For example, illusory results may ensue from data collected on the basis of a single questionnaire administered once and fulfilled by a unique individual in the organisation. On the other hand, longitudinal observations, which may be either qualitative or quantitative, based on a large sample of individuals within the same organisation, should contribute to having a better understanding of the decision process in a context of full uncertainty. This suggests that a more systematic use of longitudinal methodologies for the understanding of innovation should contribute to further results. By doing so, the research could nurture the theoretical model of innovation for services. It must be added that this understanding could also contribute to improving the existing research on the tangible products that could incorporate intangible components. Similarly, the research could also improve the management of the innovative processes by providing the factors that contribute to “innovating”.

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5. FURTHER RESEARCH.

The limits of our findings entail further research. The generalisation of the observations, the limits of the organisational learning models, the choices of the organisational perspective and of the sectors may be considered as being the main sources for further research.

5.1. THE GENERALISATION OF THE FINDINGS.

The qualitative methodologies present the well-recognised problem of the finding's generalisation. In depth observations induced as counterpart the focus on a few numbers of cases that may appear very specific. The state of the research on service innovation, which was made of preliminary empirical quantitative and qualitative investigations, did not provide any theoretical framework. Consequently, the first empirical results appeared difficult to understand. More specifically, the statements of a non-formalised process resulting in organisational changes differed strongly from the theoretical models applied to the product development. As the purpose of providing an identification of a potential theoretical model became a valid goal, the adoption of qualitative methods was fully justified. Given this overall purpose, the generalisation of the results aimed at the generalisation of the observations into a broader theory. As said by Yin (1994): "Critics typically state that single cases offer a poor basis for generalisation.....This is because survey research relies on statistical generalisation, whereas case studies rely on analytical generalisation. In analytical generalisation, the investigator is striving to generalise a particular set of results to some broader theory.". Do the findings reach this goal?

First, the observations of the way the decisions were taken all along the process led to making the organisational learning theory relevant. The actions that supported the decisions were learning actions with no doubts. Moreover, it is impossible to understand them without the learning framework in mind. Finally the learning framework provided a good explanation for the delays and problems during the innovation.

Second, it has been observed that some decisions were backed on some "guiding principles"

that were clearly not learning actions. It has also been observed that in some cases, random choices occurred, raising the hypothesis of a contingent process resulting from the external events. Nevertheless, the use of either “guiding principles” or “contingent process” is insufficient to relate from the entire process. They do not relate from the birth of the projects. They can not explain the role of the interactions between firm’s members through out the development. Finally they do not support the observations of the organisational changes occurring during and after the development. Consequently, the alternate explanations for the observed events appeared too weak to support a theoretical frame.

Third, the choice of two distinct offers, the bank “packages” and the “universe” concept of retail, provided a privileged way to cross the events and explanations. It was stated that the organisational learning frame was relevant in the two cases, though the innovative offers have nothing in common. This supports strongly the relevance of the analytical generalisation of the model. _

However, the observations resulted from the selection of given sectors, having common standardised process and delivering the offer through a distribution network. This constitutes one limit of the model’s generalisation. It has been emphasised by March, Sproull and Tamuz (1991)²⁸⁴ that very frequently, the organisations have to learn from a weak sample of events. As it has been noticed, the initial start of the two processes resulted from cognitive conflicts. The delivery of non-standardised services, achieved by ad-hoc procedures invalidates this explanation.

5.2. LIMITS IN THE GENERALISATION OF THE N.S.D. MODEL

J Gadrey (1992)²⁸⁵ by reviewing the different consultancy sectors underlined, the service in this case relies on the identification of the problem encountered by an organisation, in the proposition of a solution, and in some cases in the implementation of those solutions. This definition suggests that the interaction process is strongly correlated to the firm’s willingness

²⁸⁴ MARCH, J.G., SPROULL, L.S., TAMUZ, M., (1991), “Learning from Samples of One or Fewer”, Organisation Science, Vol 2, n°1, Feb.

²⁸⁵ GADREY, J., (1992), Manager le Conseil, Ediscience International Ed.

to co-operate, to the way the people will interact and to the circumstances which initiated the client's demand. Consequently, it may be stated that the interaction process in the case of consultancy will be less standardised than in the case of the retailing or of the bank. The design of the commercial offer is not in this case the adoption of a standardised process. Instead, the consultancy offer must be defined as being: "an activity of knowledge production and also the management of the transfer of knowledge and of the reciprocal learning (p 185)". Therefore, it may be asserted that the different sectors have very little to compare as far as the design of a standardised offer is concerned.

As we observed, learning is strongly anchored in the interaction process occurring along the development. L. Araujo (1998)²⁸⁶ emphasised that learning is residing in heterogeneous networks of relationships established between the social and the managerial world: "knowing and learning, as collective accomplishments, depend on a range of factors that are outside control of any organisation and are associated with the network of relationships conducted through canonical, institutionalised links between organisation and non-canonical, informal links established between individual in the organisation fields...We proposed to see learning as constructed within heterogeneous networks of social and material relationships that transcend and bypass conventionally defined organisational boundaries". Similarly, the Nonaka's work (1994) emphasised the creation of new knowledge as being a process of socialisation. Brown and Duguid (1991) demonstrated that the learning and innovating is anchored in the informal networks of community of practices. Because the communication between the members of the organisation induces explicitation and combination of the individual know-how, it may be asserted that the interaction processes would influence the creation of knowledge.

The sensitivity of the organisational learning to the social networks raised a limit of our sectorial choices for the generalisation of the model. In both cases, the development processes we observed remained located within the same organisation. Even though the organisations we investigated are based on networks very similar to the one described by Probst and Büchel (1993)²⁸⁷ as being evolutionary organisations, we didn't observe any development through

²⁸⁶ ARAUJO, L., (1998), Knowing and Learning as Networking, Management Learning, Vol 29, 3, pp 317-336.

²⁸⁷ PROBST, G.J.B., BUCHEL, B.S.T., (1995), La pratique de l'entreprise apprenante, Paris, Edition Organisation.

inter-organisational learning. Jallat (1994) described that the creation of the concept of low price hostel by Accor required integrating the know-how of the building companies in order to provide the quality requirements despite the low costs. In that case, the creation of knowledge must result from the collaboration of people coming from multiple organisations. By so, it could be hypothesised that the nature of the co-operation could influence learning. An alliance perceived as hostile by the managers could trigger potential reactions of defiance which could result in the protection of the existing know how. Because alliances may have opposite effects and results, as underlined by Garette and Dussauge (1995, 1997)²⁸⁸ the effect of the different kind of alliance on the development process could constitute an fruitful perspective on service innovation. As it is stated by J Gadrey (1992) for the consultancy sector, by G Hamel (1991)²⁸⁹ and by M. Ingham (1994)²⁹⁰ for development project involving many organisations, the co-operation or alliances between firms are due to create new knowledge, sometimes non-expected, and thus are due to support the development of new services. Because the project we reviewed did not integrate this dimension, we had very few possibilities to observe the factors, which can prevent or facilitate the building of competencies during the development process. Those different limits plead for further research.

Therefore, the generalisation of the N.S.D. for non standardised offers entails developing further research. Given the dimensions of service tangibility but also of the complexity and divergence of the delivery processes underlined by Shostack (1977, 1987), further research must be driven on the influence of those two variables on the development. In the case of a great divergence of the processes, as in the case of consultancy, the learning may be prevented by too few repetitions of the events. Similarly, the learning process may be strongly influenced by the complexity of the processes. It can be hypothesised that the complexity will have an effect on the quality and duration of learning. This influence of the nature of the processes on learning, and thus on the development of service innovation, may also be linked with the intangibility of the processes. Our observations revealed that managers materialised the offer through multiple, tangible evidences which differed according to the tangibility of the service. Further research should develop the way used in the more intangible sectors as the

²⁸⁸ DUSSAUGE, P., GARETTE, B., (1995), *Les stratégies d'alliances*, Paris, Editions d'Organisation.

DUSSAUGE, P., GARETTE, B., (1997), *Alliances stratégiques*, Paris, Economica.

²⁸⁹ HAMEL, G., (1991), "Competition for Competence and Inter-Partner Learning Within Strategic Alliances", *Strategic Management Journal*, Special Issue, Vol 12.

²⁹⁰ INGHAM, M., (1994), "L'apprentissage dans les coopérations", *Revue Française de Gestion*, n°97, Janv-Fev.

consulting or at the opposite of the more tangible sectors, such as the catering and hostelry sectors.

Similarly, the influence of the formal and informal social networks on the organisational learning pleads for further investigations. We identified that the breakdown of social relations prevents the innovation by inhibiting the learning. This statement is also supported by the organisational behaviour theory. Burns and Stalker (1961) stated that the organic structures support the innovation. Similarly, it is demonstrated by Bastien and Hostagger (1988)²⁹¹ that the building of communication procedures and codes between musician conditions the collective improvisation (the innovation) in small organisations such as a jazz groups. Nevertheless, this links between the nature, frequency and quality of the relations between the individuals and the service innovation remains poorly observed in the current research. Consequently, the generalisation of the N.S.D. model should benefit from further research.

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5.3. THE LIMITS OF THE ORGANISATIONAL LEARNING MODEL FOR THE N.S.D.

Though the organisational learning theory gave both to previous research and to the in depth case studies a comprehensive and well fitted framework, it presents some limits we would like to detail. One limit of the model is that many decisions could not be interpreted as resulting from a learning process. Moreover we observed that the 4I's model does not integrate the resistance to change factors. We intend now to detail those three limits.

First, many observations revealed that the O.L. could not explain the entire decision process. For example the definition of the billing process in the banking project illustrated this case. After an initial profitability and costs analysis, the project manager decided that the bill should be sent together with the other administrative documents by mail. This means that, due to the delays of the sending, the consumer would be charged at the moment he received the bill. This choice is the result of an individual learning because the project manager selected it after an in depth examination of the financial consequences of many solutions. This choice was invalidated by the general manager who adopted the principle of “transparency towards the

²⁹¹ BASTIEN, D.T., HOSTAGER, T.J., “Jazz as a Process of Organisational Innovation”, Communication Research, Vol 15, n°5, pp 583-602.

client” according to which the consumer must be informed before being charged. Because of a decision based on a “guiding principle”, without any testing, one can not speak about a learning process. Many other decisions of this kind have been taken through out the development. One reason for these choices is the perceived duration and cost of learning. Because each of the learning loops entails spending time in the experimentation of the results and in the analysis of the action’s outcomes, a rational decision on all parts of the development appears as being impossible.

This revealed one major objection against the organisational learning models. Due to the time pressure but also to the difficulty of exploring all the possible options and their consequences, it must be said that learning is in all cases partial, fragmented and incomplete. Thus, each of the actors selected implicitly the time devoted to learning. In some cases, this time has been very large. In some other cases as evoked above, the actor goes right to the decision with no learning stage. Many factors could explain this choice. The individual and previous experience could explain this choice. This means that the individual will select the nature of the answer according to its experience. When no experience is stated, then a process of learning is triggered and as a result, the time for decision is increased. But we also observed that the perception of the risk related to the decision may lead to increasing the learning strategies. Finally, it must be observed that the internal and external constraints created the pressure on the development time. In some cases, the perception of emergency resulted from competitor’s decisions. Consequently, the actors may react by avoiding to time-consuming strategies of learning. He may also accept to increase the level of risk due to the pressure on time. Thus, the factors that will determine the adoption or the avoidance of learning remains to be explore extensively.

The impossibility of achieving extensive learning refers to the bounded rationality concept developed by the research of Simon (1955, 1991)²⁹² but also of March (1975)²⁹³. Those authors demonstrated that the substantial rationality, which entails backing the choices on the

²⁹² SIMON, H.A., (1955), “A Behavioural Model of Rational Choice”, Quarterly Journal of Economics, Vol 69, pp 99-118.

SIMON, H.A., (1991), “Bounded Rationality and Organisational Learning”, Organisation Science, 2, pp 125-134.

²⁹³ MARCH, J.P., (1975), “Bounded Rationality, Ambiguity and the Engineering of Choices”, Bell Journal of Economics.

study of all the alternatives and consequences of a decision, was impossible to reach within organisations. Consequently, their research aimed at the identification of the rules that the actors will follow in order to make a choice. Those heuristics have been called “procedural rationality” which means that the choice remained rational but within the cognitive possibilities of the actors. If one considers that the substantial rationality is impossible to achieve, then one is forced to admit that the learning procedures will remain incomplete. This is what we observed. Then one fundamental and mostly implicit choice realised by the actors during the development process is the selection of the appropriate level of knowledge required in order to make a choice. This choice appeared to be closely linked with the individual, its perception of the choice’s stake and also the perception of the internal and external context. And this induced an important limit in the validity of the model for the service innovation.

The second limit due to the adoption of the organisational learning model is that the N.S.D. model does not entirely integrate the resistance to change factors. It asserts that, due to building of a learning process at the individual and group level, the organisation will adopt new features. The observations revealed that this result could not be systematically achieved. For example, many stores delayed the implementation of the “universe”, due officially to managerial or planning constraints. Some assertions related to the existence of learning traps are made in the Crossan and Al (1999) 4I’s model but also by Argyris (1999) among other.

The 4I’s model asserted that the institutionalisation may preserve learning: “But the process of institutionalising also feeds back by creating a context through which subsequent events and experiences are interpreted. This context may facilitate and/or impede the organisation’s ability to interpret and respond to its environment (p 531)”. Due to the previous institutionalisation, anchored in multiple means, such as the communication, the procedures and the information system, the actors are unable to (re) interpret what is observed and then to learn. Similar statements made by Argyris (1999) who stated that in given circumstances three kinds of threats might preserve learning. First, the threats on coherent actions, due for example to the political interests of sub-part of the organisation, could preserve the interpreting and integrating stages of the 4I’s model. Second, the production of inference may be impossible due to limited observations or possibility to repeat any test. Leavitt and March

(1988)²⁹⁴ underlined the “competence traps” where the organisations falsely projected in the future the experience acquired in the past. Third, the effective action resulting from the inference may be impossible to produce due to the fragmented of situational learning, which can not enter into the organisation’s main concerns.

Those statements suggested that the learning process, which supports the development, might be altered by the organisational factors. Consequently it may be hypothesised that the obstacle to learning leads either in the failure in the innovation or in weaker results of the launching. Because the 4I’s model we used did not integrate the limits of the organisational learning, it must be stated that further research must investigate the service innovation.

5.4. CLIENT’S LEARNING

Finally, the learning model for N.S.D. emphasised the importance of the interactors in the process. AS we adopted the perspective of the organisation on the development, very little is said about the ways used by the client in order to learn a new intangible process. In all the cases, and because the attributes of the service and also the processes are mainly intangible, the learning of the client may lead to the adoption or to the rejection of the new service. The research of Atuahene-Gima (1996) confirmed that the consumer’s understanding of the service may be clearly related to the market success.

Considering the development under the “innovating” perspective rather than the innovation one, entails the adoption of a learning point of view on the consumer. Given the newness of the offer and the impossibility to assess easily intangible processes, it may be hypothesised that the client’s reactions result from learning. Rather than considering the client’s perceptions as a “given”, it should be more realistic to analyse them as being built by the successive interactions with the organisation. In such a perspective, the client is an “interactor” in the system, like any other member of the firm.

The adoption of a systemic and of the learning process suggests strongly that the consumer’s

²⁹⁴ LEAVITT, B., MARCH, J.G., (1988), “Organisational Learning”, *Annual Review of Sociology*, 14, pp 319-340, Quoted in Argyris, C., (1999), *On Organisational Learning*, Blackwell, Second Edition, pp 12.

reactions to an offer are not set in advance. Rather than considering that the client has pre-defined preferences and expectations, it may be hypothesised that the reactions to an innovation are built progressively, during a learning process. Consequently, one should assess the existence of cognitive conflicts, of the interpretations, of testing the interpretation by interactions and of behaviour's routinisation.

Though a whole body of the marketing literature has been devoted to the understanding of the consumer's behaviour faced with innovation, the intangible and systemic characteristic of services deserves further investigations.

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6. MANAGERIAL RECOMMENDATIONS

Given the strategic importance of innovation, the identification of factors that could facilitate or support development is of first concern for managers. Due to the qualitative aspect of our research, it is impossible to provide a normative model of what must be done during the innovation. However, as observations of previous research on service innovation find their place in the model of Organisational Learning, it is possible to provide managerial recommendations for the organisation of new service development. They will be done around five main points: **1- The abandonment of a standardised process, 2- the use of specific vocabulary to initiate and foster development, 3- the management of competencies all along the process, 4- the support of communication flows, 5- the “freezing” of the interpretation and learning process.**

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6.1. INNOVATION PROJECTS ARE NON STANDARDISED PROJECTS.

A whole stream of research on new product and service development hypothesised that some standardised development models could lead to better results in innovation. The observations from this research demonstrated that the only common point to the creation of new offers is that staffs have to learn. No common context, no similar organisations, no standard procedures or know how has been used to create and deliver offers. Rather than those reinsuring models, it has been observed that teams created new offers by providing new interpretations of their environments, competitors, companies and goals. It has been established that they reduced uncertainty of the interpretations by testing them and that they created new forms of knowledge from the validated assumptions. And eventually, it is easy to understand how those teams, by successive internal and external interactions, transformed the knowledge into new rules, procedures that resulted in new offers.

This could appear as troublesome for those who looked at reducing uncertainty by pre-designed means. The lessons from experience in innovation are rarely found in other's experiment because innovating entails producing something new. However, innovating does not mean acting randomly with the hope that some unexpected and positive result may ensue

from this. The results indicate very clearly that innovation is a process where organisations renounce existing knowledge, build a flow of new interpretations emerging from conflict and cognitive dissonance, test them and create new offers that could provide answers to the discrepancies and eventually recreate a new stream of organisational knowledge to support the offers. The only process that is common to the projects of innovation is learning within the organisation.

This means that the way to foster innovation is to foster learning. In other words all the actions that could aim at creating a supportive culture for learning should be considered as being supportive for innovation. This is the reason why, supporting the interpretations and thus the divergence, enlarging the scope of skills and competencies associated with the development, facilitating the testing, making the interactions between people easier and encouraging the formalisation of the outcomes should be more systematically used as a guiding principle for managing new services development. For example, implementing a state of mind that considers the failures, conflicts and dissatisfactions as opportunities to progress could contribute a lot to innovation. Conversely, Crossan and Al (1999) demonstrated that being stick to routinised behaviours resulting from previous learning, could prevent the emergence of intuitions by avoiding recognition of conflicts. Rather than being a source of gaps, errors and misunderstanding, the focus on the means that can contribute to the emergence of a flow of diverging interpretations will eventually contribute to the renewal of procedures and offers.

6.2. THE USE OF VOCABULARY TO INITIATE AND FOSTER THE DEVELOPMENT

Among different means used by executives for creating conditions of innovation, the use of vocabulary must be emphasised. In our two cases, managers choose a specific name for the project. This name has been selected according both for its ability to define the kind of innovation that was expected and for its ambiguity.

The name “Universe project” for the reorganisation of non food shelves in the store was selected because it suggested among other meanings the absence of limits, the huge scope of the project, the structuring of a universe of consumption, the dream of a group of people. By

using an ambiguous term, managers created tension and avoided bringing an immediate response. By doing so they created the need to interpret what they said at all levels of the organisation. This flow of interpretations resulted in multiple contributions about what could be offered to clients in the store. By using vocabulary, it is possible to replace a univocal interpretation on what must be a standard offer by a proliferation of proposals that can be tested.

Similarly, bank managers replaced the initial name of the project for similar reasons. As the initial name was “remuneration-billing”, it appeared very fast that first proposals were more based on administrative processes than on customer expectations, and were not creative at all. Then it has been decided to rename the project “Service Price” and not to give any information about what could be the offers both in terms of service and in terms of price. This choice said that this bank must conceive new service offers and that they must price them to their clients. But at the same time, this choice said nothing about the right choices and offers. It remains vague and allusive about pricing policy. Another time, it fostered interpretation by obliging staff members to provide their own interpretation on what could be service offers for banks.

This specific use of ambiguous vocabulary, which could at the same time give a first impetus in the development and can remain vague in the way the teams can find solutions, appears to be a very efficient way to raise innovative answers. This doesn't mean that its use will necessarily result in successful offers. However, it creates the conditions to foster uncertainty and therefore a higher effort dedicated to renew the interpretations of reality. It suggests also that multiple actors could contribute to the enrichment of the interpretative frame. This entails managing the competencies all along the development process.

6.3. THE MANAGEMENT OF COMPETENCIES ALL ALONG THE PROCESS

Learning has to do with the individual and collective competencies. The multi-functional teams, because they extend the potential experience of the group by adding the multiple individual history and competencies, contributed clearly to improve launching results. Because the solving of problems all along the development is based on the contributions that

each individual brings to the process, the adoption of multi-skilled groups, including internal and external individuals, will enrich the process by two ways. First, by providing multiple interpretation frames, the group diversity should result in a more rich and detailed image of the events. Second, the extension of the scope of competencies that contribute to a given project will enrich the overall learning process by adding knowledge previously acquired. This means that the managers should select the individual they will put in the process according to the previous experience or knowledge they can bring to the process. If the new service is due to rely on a strong information network, thus computer engineers must participate in the workgroup. Similarly, if the distribution network has to play a major role in the production and selling of the offer, then specialists of this part of the process must participate to the project. Because our statements demonstrated clearly that each time a core competency was missing, the organisation encountered failures that could preclude success, it appeared that the identification of the competencies required to solve problems is a crucial choice for succeeding in the development of new services. In all the cases, each time a decision was taken with no learning or with inappropriate competencies, is adopted after the creation process, there was a lack of efficiency, either because it will be necessary to have learning at the operational level, or because this decision will contradict parts of the previous work.

This does not mean that all competencies should be included in the development team from its beginning. The moment where they must be integrated in the process could also influence the result. As it has been possible to observe that the development process is dependent from the divergence of the interpretations it is suggested that the development stage may remain open until the very end. An early “freezing” of the options, that could be adopted to reduce the feeling of uncertainty, will certainly stop the integration of diverging interpretations and therefore, will impoverish the result. Similarly, the “freezing” of the expression of the individual interpretation, achieved for example by favouring “conformity” norms, should have similar results. The example of the computer department appeared to be one of the most sensitive in our two cases. Neither of the two companies could afford not to redesign their information system to be able to produce a new offer. Such a change requires the development team to integrate the competencies of the computer engineers. This however has been done too late in both cases. The design of the offers was already done and before the engineers discovered that some part of the delivery could not be produced by the computers and software. This resulted into major delay in the launching. On the contrary involving the

computer engineers to early means that they will “freeze” service specification by developing the software in an unambiguous manner. By doing so they will prohibit any other adaptation and therefore the overall creativity of the development.

This leads to the recommendation of flexibility in the composition of the development team. Even if some staff members must be associated with the project for all its duration, the adjunction of further competencies for sub-parts of the development could contribute a lot to the final success. Rather than considering that only a determined group should be able to design the service, it can be recommended to keep flexibility in the team composition all along the process.

Eventually, the central contribution of the competencies in the final success could be interpreted in another recommendation. Previous empirical research emphasised that the overall fit with the existing portfolio of offers was a strong predictor of success. The adoption of the learning perspective provided in depth analysis of the reasons of this statement. Aiming at creating synergies means that the new offers may benefit from the existing organisational competencies. Similarly, the adoption of similarities should contribute by easing the customer’s learning by referring to previous experience. This means that each time a new delivery process is not supported by internal competencies, it should be considered as potentially leading to failures and therefore carefully analysed.

Considering the development of new offers as a learning process leads to focusing on the central contribution of a portfolio of competencies that will support the development. However, this is not the only factor that can contribute to success. The way they are interrelated, appeared to be crucial.

6.4. THE SUPPORT OF THE COMMUNICATION FLOWS

This research demonstrated how much the production of a new service offer is linked to the creation of organisational learning. This means that the sole management of the individual skills is not enough to produce expected result. Designing solutions means to integrate in each decisions the competencies of multiple individuals. This integration task is strongly supported by the communication between team members. This made the interaction process as one important means for improving the development. The facilitation of the interactions between well-skilled people should benefit projects.

Many solutions could contribute to this purpose. First, it has been observed that the possibility of establishing informal contacts and conversations could contribute to improving the number and quality of exchanges. This suggests that large organisations, divided into many departments and divisions, should consider the creation of development units where the members of a project could interact and exchange with the other experts of the different fields. Similarly, the implementation of team building stages at the beginning of the process could lead to better inter-personal communication and by so, support the progressive design of the offers. For the same reasons, potential political barriers that could prevent communication flows must be carefully examined each time new team members participate into the development.

Other solutions are linked to the formalisation of projects. The adoption of frequent iterations in the project, obtained by the multiplication of formal internal or external presentations, should multiply the confrontations, the reactions and therefore will provide more opportunity to integrate the comments and skills of the participants. Through this, the communication flow will increase and will ease the mutual adjustment of the sub-parts of the project. Similarly, the formalisation of the communication will oblige the expert to transform their “tacit” knowledge into a more explicit one. The theoretical model of learning underlined the differences existing between the tacit and the explicit knowledge. In the case of intangible processes, this distinction appeared to be crucial. When the experience produces in non-expected results, the explicitation of what is produced appeared to be of first importance. By the formalisation, the team members will support the integration of their experience in the

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ANNEXES

Annexe n°1: A Detailed Review of the Research on Service Innovation.

References	Methodologies	Main Conclusions
Atuahene-Gima, K., (1996), "Differential potency of factors affecting innovation performance in manufacturing and services firms in Australia", Journal of Product Innovation Management, Vol 13, p 35-52.	Quantitative. Comparative Survey. Data collected on 117 service firms and 158 new products via self rated questionnaire. Factor analysis to select the relevant variables.	Human resources development orientated toward innovation, Co-ordination/ Teamwork, marketing synergies, use of new technologies are significantly related to success.
Atuahene-Gima, K., (1996), "Market Orientation and Innovation", Journal of Business Research, Vol 35, p 93-103.	Idem to previous article	Market orientation is not related to market success. Inter-functional teamwork and the customer's understanding of the service are related to the market success.
Bowers, M.R., (1989), "Developing new services: improving the process makes it better", Journal of Services Marketing, Vol 3, n°1, p 15-20.	Quantitative. Survey of marketing managers in the U.S. banks (108), Insurance companies' (83), Hospitals (61).	The theoretical eight stages of an appropriate development process are rarely systematically driven. Formal idea generation, product development and testing, market testing are rarely carried out.
Cooper, R.G, Easingwood, C.J., Edgett, S., Kleinschmid, E.J., Storey, C., (1994), "What distinguishes the top performing new products in financial services", Journal of product innovation management, Vol 11, 4, p 281-299.	Quantitative. Consumer financial sector. Based on 173 self rated questionnaires about new services in Canada. Analysis attempts to separate successful launching from moderate performers. Fourteen measure of performance where used and more than 100 independent variables where reduced with factor analysis to 11 factors.	Key factors where: Marketing synergies, market driven new product process, effective marketing communication, customer service, managerial and financial synergy and launch preparation. Product design doesn't appear as being the key issue.
Cowell, D., (1988), "New Service Development", Journal of Marketing Management, Vol 13, n°3, pp 296-312.		Conclude to small, scattered changes rather than proper and radical innovations.
Davison, H., Watkins, T., Wright, M., (1989), "Developing new personal financial products: some evidence of the role of market research", International Journal of Bank Marketing, Vol 7, n°1, pp 8-15.	Quantitative Survey into the nature of and role of product development in 110 personal financial service organisation in the U.K (bank, Insurance, Building companies).	84 organisations had introduced at least one product on existing market during the previous year. Half of them on new markets Most important sources of idea are competitors. Because of low financial costs and failures, no market test was systematically done. Decision to launch is based on profitability, competitors behaviour and the fit with existing products.
De Brentani, U., (1989), "Success and failure in new industrial services", Journal of product innovation management, Vol 6, décembre, p 239-258. De Brentani, U., (1991), "Success factors in developing new business services", European Journal Of Marketing, Vol 25 n°2, p 35-59. De Brentani, U., (1993), "The New product process in financial services: strategy for success", International Journal of Bank Marketing, Vol 11, n°3, p 15-22.	Quantitative. Multi-sectorial (bank, insurance, accounting and shipping). Comparative survey. Data collected on 150 successful new services and 126 failures from 115 companies.	Empirical investigation, trying to identify the factors of success and failure. The results differ strongly according to the way the performance is measured. When one factor is positively correlated with one-performance criteria, it affects negatively the other one. The only factor, which matters whatever the measurement of performance, is the overall product synergy. Formal development and launch programs driven by expert are due to improve success. Supportive and High involvement environment also contribute to success.

Dover, P.A., (1987), "Innovation in banking: the in-home computerised banking example", International Journal of Bank Marketing, Vol 5, n°1, p 39-54.	Case Study. One single British Firm (Nottingham Building Society)	Analysis of the development process: the way managers identify opportunities, the importance of a product-champion, stressed the importance of enthusiasm to overcome the problems arising. Stressed also the importance of "learning by doing".
Drew, S., (1995), "Strategic benchmarking: innovation practises in financial institutions", International Journal of Bank Marketing, Vol 13, n°1, p 4-16	Quantitative survey based on 44 banks and other financial institutions in Canada. Comparative research.	Improved management information systems, hiring new employees, changing job descriptions and rewards systems are identified as being contributors to innovation.
Easingwood, C.J., (1986), "New Product Development for Services Companies", Journal of Product Innovation Management, Vol 4, N°2, pp 264-275.		The number of small changes that can be developed into real innovation depends on the degree of standardisation and technology involved. The more standardisation, the more technology, the more real innovation;
Easingwood, C.J., Percival, J., (1990), "Evaluation of new financial services", International Journal of Bank Marketing, Vol 8, n°6, p 3-8.	Investigation on 18 new financial products which had been in the marketplace for at least two years. The research aimed to identify non direct benefits,(non financial), expected from innovation . Interviews of marketing managers.	Six benefits were identified: Improved company reputation, increased consumption of existing products by current and new customers, improved NPD capability, enhanced loyalty and helping to move company in a new direction. Underlined the importance of non-financial benefits in the NPD process. ¹
Easingwood, C.J., Storey, C., (1991), "Success factors for new consumer financial services", International Journal of Bank Marketing, Vol 9, n°1, p3-10	Mail questionnaire to Marketing Managers (77 answers). Interest account, mortgages, life insurance, endowment policies, various types of insurance policies, personal equities plans.	Aims at the identification of success Factors. Eight factors explain 70% of the variance: overall quality, consistency in communication, direct mail strength, differentiated or unique products, distinct company positioning, effective segmentation and intermediary strength, product fit and internal marketing, use of technology. Indirect factors as the development process are also due to matter.
Easingwood, C.J., Storey, C., (1995), "Determinants of new product performance: a study in the financial services sectors", International Journal of Service Industry Management, Vol 7, n°1, p 32-55.	Sample of 153 consumer of financial services from UK. Aims at establish correlation between 90 variables and 3 performance criteria (sales performances, profitability, and enhanced opportunities).	Key success factors depended on the performance measure. When keys to sales performances are effective communication, overall product company fit and distribution strength, the profitability depends on staff skills and support, the quality of the service delivery, the product/tangible quality and for the enhanced opportunities product/tangible quality, market knowledge, and product distinctiveness.
Edgett, S., (1993), "Developping new financial services within U.K. buildings societies", International Journal of Bank Marketing, Vol 11, n°3, p 35-43.	Postal Survey sent to 67 companies, which represent 95 % of the sector's financial assets. Questionnaires aim at the identification of the development practises.	Formal development practises, market assessment and research techniques are not commonly used. Market and competitive approach are more commonly used than the technology driven techniques. Market assessment concentrate on internal research techniques rather than external.
Edgett, S., (1996), "The new product development process for commercial financial services", Industrial marketing management, Vol 25, p 507-515.	Sample of 82 US and Canadian financial institutions. Concentrate on the nature and the number of the development activities.	The results Highlight the poor development state of product development in service organisations. Amongst 13 development activities identified, only 2 were carried out in Two third of the cases. Five activities differentiate on performance: Initial Screening, preliminary market assessment, detailed market study, product development and post launch review.

Edgett, S., Jones, S., (1991), "New product development in the financial service industry: a case study", Journal of Marketing Management, Vol 7, p 271-284	Case study. Analysis of the development process of a card-based transaction account by the National and Provincial Building company.	The development is a response to the competitor actions. Success is attributed to: clearly defined target market, well organised process, effective performance of the product manager, strong launch campaign supported by effective budgets, differentiated product and strong top management support.
Edgett, S., Parkinson, S., (1994), "The development of new financial services: identifying determinants of success and failure", International Journal of Service Industry Management, Vol 5, n°4, p 24-38.	Marketing managers of 67 Building companies provide 62 successful and 56 unsuccessful projects. 61 variables were reduced in 11 main factors.	Factors in discriminate function are organisational, market research, market synergy, financial, launch effectiveness, formalisation and design testing. Two key factors where highlighted: the synergy of the new service with the market and the company and the importance of intra-organisational involvement and integration among departments
Edvardsson, B., Haglund, L., Mattson, J., (1995), "Analysing, planning, improvisation and control in the development process of new services", International Journal of Service Industry Management, Vol 6, n°2, p 24-35. — —	Based on case studies relating from the history of the development projects.	Main sources of problems identified are: interdependency of service technologies and of different development projects, lack of information about specification at the beginning of the process, Limited research on consumers, lack of co-ordination between different functions, intraorganisation conflicts and struggle for power between different function, informal decision making. The authors underlined that a well-organised process would have an adverse influence on creativity and innovation.
Eiglier, P., Langeard, E., Jallat, F., (1986), "Contribution à l'étude du nouveau service: concepts et pratiques manageriales", Rapport de recherche, Ministère de la Recherche et de l'Enseignement Supérieur, IAE, Aix en Provence.	40 qualitative interviews of executives in charge of innovative projects. Differentiated sectors. Focused on the management of the innovative process	The innovative process is the result of diagnostics commonly shared with competitors. With same diagnostics, companies develop very differentiated solutions. Unorganised development process. Very few marketing research. Important investment to test the servuction system which is the priority all along the development. No investment on the final image of the offer. No distinction between concept development and network implementation.
Hart, S.J., (1993), "Dimensions of success in new product development: an exploratory investigation", Journal of Marketing Management, Vol. 9, pp 23-41.	Focused on new product development.	Devoted to measure the way campaigners measure the results of the launch of new products. Criticising the insufficient approach of previous researcher, a new scale is proposed based on financial and non-financial items. A detailed description of the different items is proposed around: sales growth, average profits, Sales growth vs industry average, vs five largest competitors, number of R&D projects, number of new products launched, % successful launches, Characteristics of successful new products. The results show no consistent correlation between measure of success and effective success.
Hart, S.J., Service, L.M., (1993), "Cross Functional integration in the new product introduction process: an application of action science in service", Journal of Service Management, Vol 4, n°3.	Action Research. Realised in a retailing company.	Highlight the importance of the interfunctional integration in the new service development.

Jallat, F., (1992), "Management de l'innovation dans les entreprises de service au particulier: concept, processus et performances", Thèse de Doctorat de l'université de Aix-Marseille III, Juin.	Quantitative research. Multisectorial sample made of French firms. Focused on the development process. Try to establish links between the nature and the proficiency in the development process and the success.	No formal link may be established between the organisation of a process and the final result. Though surprising, the results may be considered as reliable.
Johne, A., (1994), "Developping new products: marketing for success", Capital Market Strategies, Vol 1, p 41-46	Eight banks, developing similar derivative products, were studied in a comparative approach. The Mc Kinsey framework was applied to identity the difference between successful and unsuccessful firms.	Only in the case of structure there was a clear and significative difference between success and failure. The banks structured on the products basis was more successful than the one structured in the function basis. For success the emphasis is put on the internal marketing in order to assume that the person who support the process are as much involved in the project as may be the consumers.
Martin, C.R., Horne, D.A., (1993), "Service innovation: successful versus unsuccessful firms", International Journal of Service Industry Management, Vol 4, p 48-64.	Comparative survey based on 27 successful and 37 unsuccessful US based service firms.	Successful firms were found to fit more closely their new service to the existing portfolio, to use consumer information and to allow product champion to manage the launch phase of the process.
Martin, C.R., Horne, D.A., (1995), "Level of success inputs for service innovations in the same firms", International Journal of Service Industry Management, Vol 6, p 40-56.	Comparative survey using sample of paired products (the most successful and the least) within the same company. 88 service US Firms investigated. Focus on the customer involvement in the development process.	Customer involvement is very low in service companies. It is linked with success. Internal involvement is also important in the successful result.
Raesfeld Meijer, A., De Ruyter, K., Cabo, P., (1996), "Cooperation in new service development: a social dynamic approach", Advances in Services Marketing and Management, Vol 5, p 193-214.	Aims at the identification of the change in the socio-cognitive configuration during the innovation process. Longitudinal research based on the comparison before and after the innovation of the cognitive similarity and communication frequency.	The launching was unsuccessful. The failure is due to the change in the socio-cognitive configuration which isolate important actors, reducing the shared meanings and actions.
Reidenbach, R.E., Moak, D.L., (1986), "Exploring retail bank performance and new product development: a profile of industry practises", Journal of Product Innovation Management, Vol 3, n°3, p 187-194.	Sample of 121 US banks. Comparative survey between top banks and those with poorer performance. No difference is made in terms of successful products, or in terms of new products financial contribution.	Top performing banks have more structured development process, undertake more stages and spend more time on development.
Salleh, M., Easingwood, C., (1993), "Why european financial institutions do not test market new consumer products", International Journal of Bank Marketing, Vol 11, n°3, p 23-28	Investigation on the importance and reason of use of marketing research for development. Sample made of 18 UK financial institutions with interviews of executives and then postal questionnaire (32% of answers with 46 replies).	Findings reveal that market research was driven in only 18% of the cases. By the same way concept testing is frequently omitted. Review the reasons evocated for this.
Scarborough, H., Lannon, R., (1989), "The management of innovation in the financial service sector: a case study", Journal of Marketing Management, Vol 5, n°1, p 51-62	Case study on a financial institution (The launch of Home and office banking system of the Bank of Scotland).	The first part of the article emphasis that "the developmental model of innovation is of limited value in the context of financial services". The authors assert that to exploit IT potential, managers have to overcome the structural inertia which is rooted in the internal political forces. The case study illustrates the inadequacy of the functional approach for strategic innovation.

Scheuing, E.E., Johnson, M.E., (1989), "New product development and management in financial institutions", International Journal of Bank Marketing, Vol 7, n°2, p 17-21.	Survey of 66 chief marketing officer of US financial institutions. Analysis of the development process and new products structure.	Most of the institutions have not formal development structure and process. Development Teams are commonly used to implement and assess new ideas. Competitors are the most commonly source of ideas for products.
Thwaites, D., (1992), "Organisational influences on the new product development process in financial services", Journal of Product Innovation Management, Vol 9, p 303-313.	Postal survey. 70 responses from members of UK building society. Formal comparison between firms is not driven.	Three main factors are identified: 1- "Communication" based on management style, organisational structure, vision, leadership, idea generation, and simultaneous development. 2- "people": product champions, employee effectiveness, risk management. 3- "Mission" made of technology and market knowledge.

**PAGES
MISSING
IN
ORIGINAL**

**Annexes n°2: Detailed List of the Products Category Before Change for
CORA.**

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14. 10.

BAZAR LIBRE SERVICE

[illegible]

Janvier 1996[illegible]

BAZAR AVEC SERVICE

**Annexes n°3: Illustration of Mixed Categories on Promotional Leaflets for
' CORA.**

TEXT BOUND INTO

THE SPINE

LE SENS DE L'EQUILIBRE SELON CORA AUXERRE

Plus que jamais,

le monde d'aujourd'hui est à la recherche d'un équilibre.
Et l'équilibre, c'est tenir bien droit sur ses deux pieds, sans chanceler,
sans se laisser emporter ni d'un côté ni de l'autre.

À Cora Auxerre, nous n'avons pas peur de dire que nous avons "un pied dans la tradition" et un pied dans la modernité. Car on peut être proche des valeurs traditionnelles et à l'écou d'un monde qui bouge. Glorifier le terroir bourguignon, son savoir-faire, sa passion de la bonne chère simple et rustique... et se tenir à la pointe des technologies passionnantes et des innovations les plus géniales.

Voilà ce que Cora Auxerre vous propose : un univers de valeurs et d'idées nouvelles, où Rabelais côtoie Internet et où les Bourguignons du 21^e siècle trouvent l'équilibre, la sagesse et la joie de vivre.

PLAN MAGASIN

À l'entrée de votre hypermarché, un plan détaillé vous permet d'accéder directement aux produits que vous recherchez.

FORMATION MICRO

Vous possédez un micro-ordinateur ? Vous souhaitez apprendre à mieux le maîtriser ? Nous pouvons vous aider à progresser ! Cora confirme son offre grandissante de services en vous proposant des stages de formation à l'outil informatique. Les stagiaires sont encadrés par un formateur agréé dans une salle équipée de 5 micro-ordinateurs. Renseignements : **0800 05 20 72**

ABONNEMENTS

À votre service pour vous proposer la meilleure solution en fonction de vos besoins (téléphonie, satellite).

CORA POUR L'ENVIRONNEMENT

récupération et recyclage... des bennes à verre, vêtements et déchets divers sont à votre disposition sur le parking du magasin.

CÔTÉ VINS

Comme dans une véritable cave, nos vins sont éclairés par des lampes aux iodures de sodium qui n'altèrent pas la qualité des produits.

Consultez sur l'index le numéro de l'allée où se situe le produit que vous cherchez.



290 F^{TTC}

LE PACK SFR

Le Pack comprend :

- Le nouveau portable Motorola d 520
- Les frais de mise en service
- L'accès à 5 Forfaits SFR au choix, du Forfait 1H + 1H Week-end à 165 F TTC/mois au forfait 5H + 5H Week-end à 405 F TTC/mois

ou à la formule **Sérénité**
2H : 215 F TTC/mois,
appels au-delà : 1 F TTC/min.

* Accès au Choix aux Forfaits : 1H + 1H week-end : 165F ou 2H + 2H week-end : 215F ou 3H + 3H week-end : 265F ou au Forfait 5H + 5H week-end : 405F ou à la formule Sérénité : 215F au choix 1H ou 2H TTC. Appels en France, hors d'urgence et vers certains services SFR, dans les zones couvertes par le réseau GSM de SFR.

SFR

Décompte à la seconde près après la 1ère mn décimale de chaque communication. Heures week-end : du vendredi 20 H au lundi 8 H. Durée maximale de souscription : 12 mois. Couverture de la ligne avant le 31/12/99. Le matériel n'est utilisable que sur le réseau GSM de SFR avec la carte SIM incluse.

Le Monde Sans Fil est à Vous.

Et vous, c'est quoi votre cadeau de Noël ?

Offre Découverte Noël : 175 F = 4 H pendant les 3 premiers mois.

Participants : Sagem, Matra.

Bouygues Telecom LE SON DIGITAL

VÉLO ÉLECTRIQUE VILLE D 26
NEXUS 4V+ ELECTRIC

6175 F

CONSEILS
ET SERVICE
APRÈS-VENTE
SUR PLACE



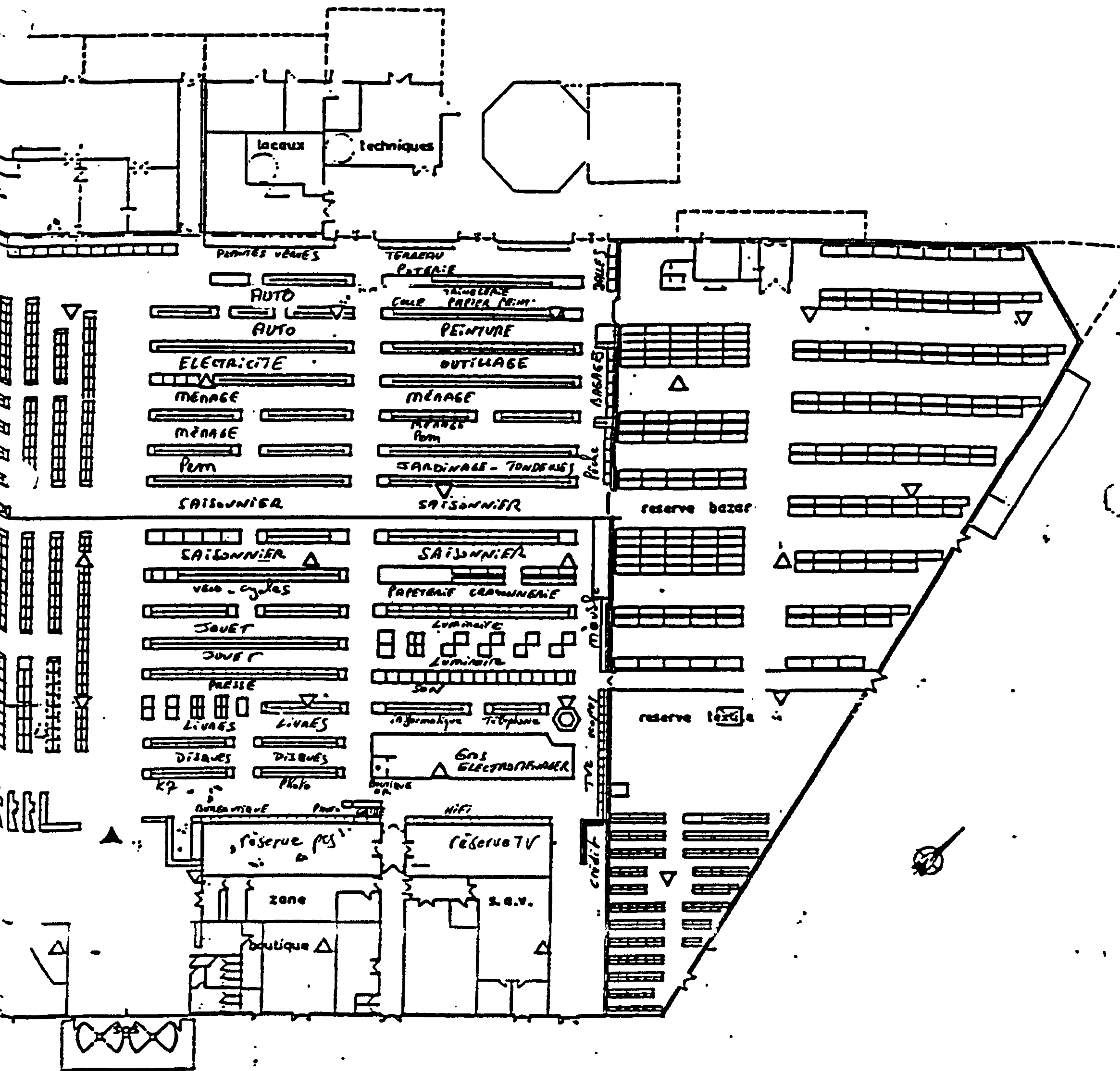
de votre ancien vélo pour l'achat d'un vélo neuf marqué d'un point rouge

SUR TOUT LE RAYON
GROS ÉLECTROMÉNAG

articles munis d'un point rouge

Annexes n°4.A: Sales Area of the FORBACH Store before the Change

CORA FORSLAET



implantation avant 1997
BLS + BAS

SEP 93

FB

55 A

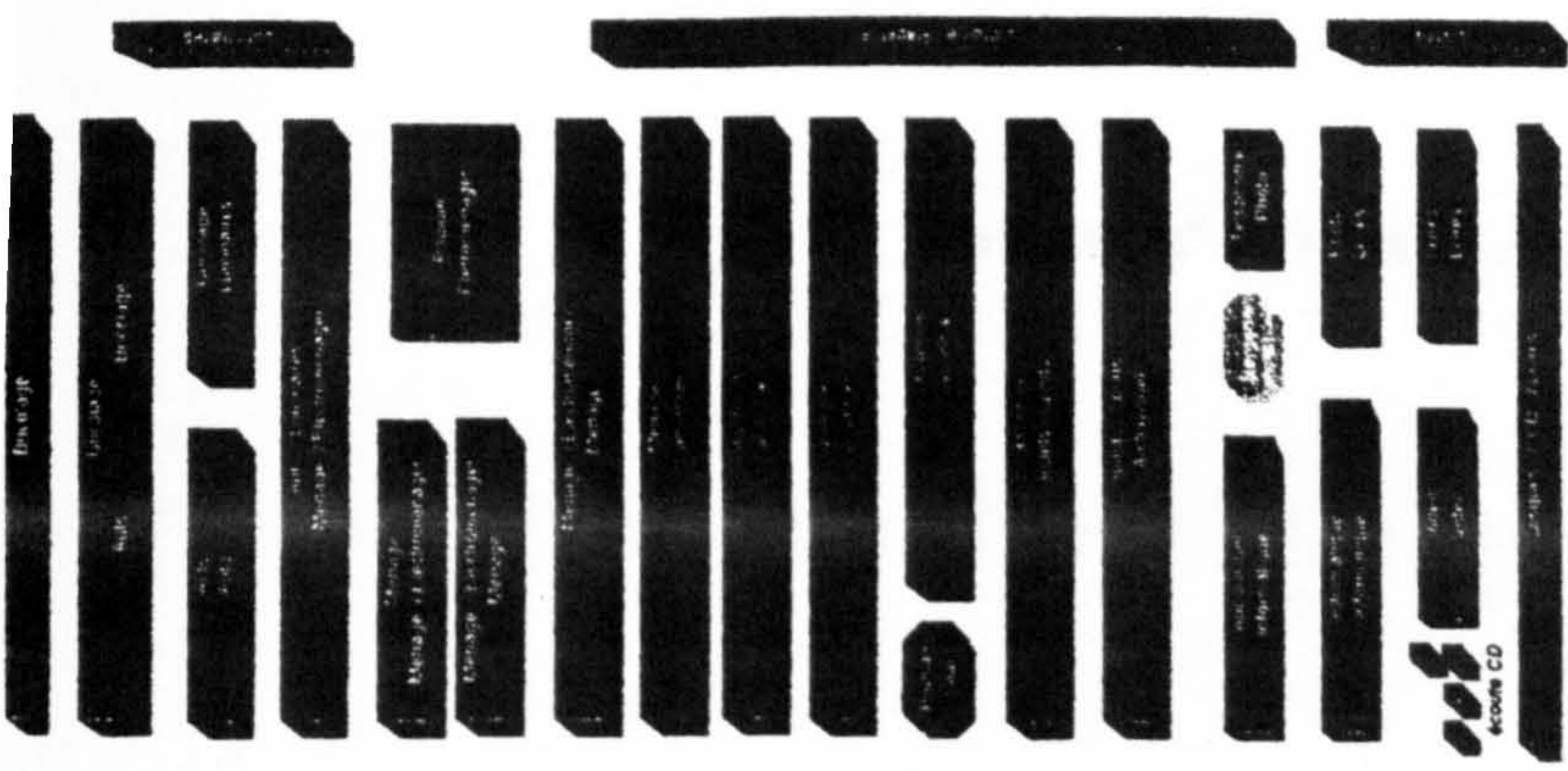
Annexes n°4.B: Sales Area of the FORBACH Store After the Change.

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Boulangerie

Horaires d'ouverture
Lundi au vendredi : de 9h00 à 20h30
Samedi : de 9h00 à 20h00

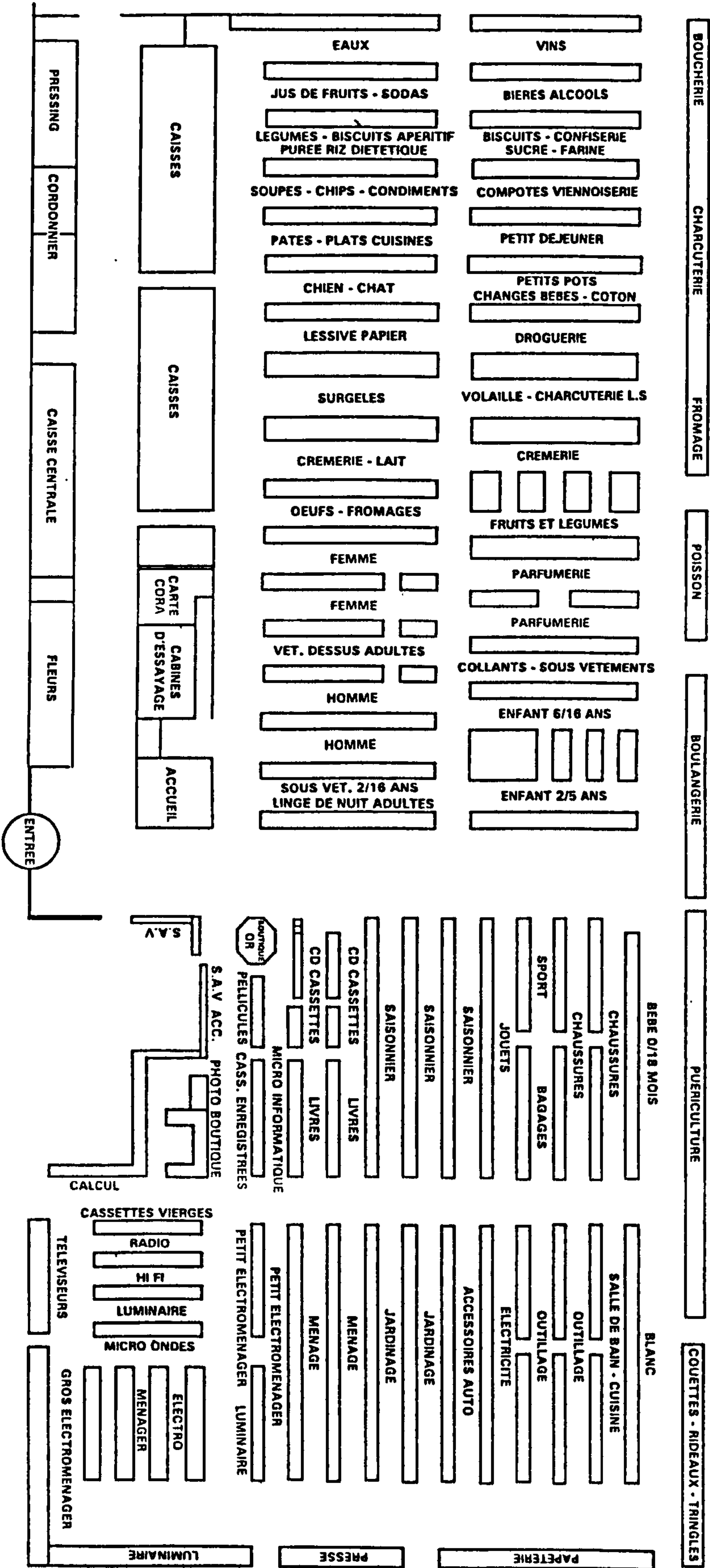
Annexes n°4C: Sales Area of the Sarrebourg Store After the Change



Annexes n° 4.D: Sales Area of the Remiremont Store

CORA REMIREMONT

APRES



PAGE

NUMBERING

AS ORIGINAL

Annexes n°5A: Stages of the development process for CORA

Date	Main Event	Comments
janv-90	Premiers dépliants promotionnels, "Monde Cora", organisés par univers. Les magasins restent organisés en rayon.	
Pas de Date	Mini-tests en magasins, volontaires ou non ?	Les tests, difficiles à dater ont été probablement fait non pas dans un logique projet mais plutôt dans une logique d'exploration dans les situations variées du contexte de chaque magasin.
nov-93	Première études S.A.D.	
janv-94	Anniversaire CORA	Premier projet transversal
févr-94	Création du Premier Groupe Projet Univers	Volonté de créativité à ce moment. Animé par Didier Colas
août-94	Présentation du projet en réunion de directeurs	Intérêt de J. Bouriez à poursuivre le projet mais sans décision formelle de lancement. 14 directeurs se disent prêts à tester à leurs risques le projet et donc à ré-implanter le magasins. Décoration maison et Loisir Culture
oct-94	Relancement du projet par une note de la D.G.	Lancement de tests en se concentrant sur des rayons précis: arts de la table par ex. Lancement d'une proposition de collection par la centrale d'achat. Cette proposition va s'appliquer sur tous les magasins. Démarrage d'une action de communication.
oct-94	Test sur le magasin de Creil.	Test sans changer les organisation humaines du magasin. Pas de compte rendu formel. Test très positif.
mars-95	Création d'un nouveau groupe projet.	Claude Leblanc animateur du deuxième projet, D Colas étant parti à Hong-Kong
mai-95	Envoi d'un questionnaire aux directeurs de magasin pour faire remonter les expériences déjà vécues.	Remontées formelles non trouvées.
	Création de tables rondes consommateurs pour tester le passage et premier avis sur une offre transformée.	Premières formalisation des perceptions clients.
sept-95	Mise en chantier du premier dépliant art de la table avec passage des rayons en univers. C'est le groupe de travail qui va sélectionner les produits proposés dans le dépliant. K. Girard, D. Doué reintégreront la centrale et le service communication.	L'objectif est que le magasin ne doit pas être déceptif par rapport aux dépliants.
oct-95	Test sur différents magasins dont le magasin de Villers-Semeuse. Réorganisation plus poussée des rayons. Les responsables centrale sont associés.	Le test porte également sur le type de rayons à regrouper, et pas seulement sur la perception des clients. Le magasin de Villers est choisi entre autre parce que le matériel permet plus facilement des transformations.

	Pendant ce temps le groupe projet avance sur des comparatifs de chiffres d'affaires.	
janv-96	Officialisation de la décision de changement.	
févr-96	Projet de redéfinition des rayons bazar avec et sans libre service par les responsables des files BAS, BLS, Textile. Lancement d'un travail avec la file pub.	
mars-96	Phase de définition très détaillée du projet.	Comparatif de CA, Arbitrages sur les appartenances des produits aux familles et sous familles.
mars-96	Lancement du prospectus Univers. Epoque d'un grand développement de la déco (Ikea, Habitat, Lethu etc....)	Mélange art de la table, luminaires, textiles, électroménager, meubles, plantes vertes. Résultat du brainstorming des équipes projet. Présentation des collections avec décors et ambiance
		Première en terme de mélanges, de produits vendus, agence intégrée depuis le départ.
juin-96	Présentation des résultats des travaux en réunion des directeurs	Grand succès mais sur un univers limité
sept-96	Fin du deuxième groupe projet animé par C Leblanc. Redémarrage d'un groupe de travail pour élargir le projet à l'ensemble du non alimentaire par D Colas animateur. Mise en place d'une nouvelle politique de communication.	
janv-97	Mise en place d'une redéfinition de la politique de communication. Premiers prospectus dans un contexte de maîtrise des dépenses.	
mars-97	Responsables de groupes département. Restructuration par univers en démarrage	
juin-97	Présentation en réunion de directeurs.	Présentation des structures définitives et des grandes dates du planning. La décision est prise à ce moment.
juil-97	Lancement du chantier informatique et finalisation des structures de produits par univers	A ce moment la procédure de constitution des historiques est décidée et donc le lancement décalé d'une année.
oct-97	Passage du vocable univers au vocable département pour désigner les même collections.	Passage de 3 DPT, 5 rayons, à 3 DPT sous divisés en 4 rayons (4 managers de rayon en moins en interne par mag).
janv-98	Mise en place des hommes en nouvelles structures.	
janv-98	Mise en place de la nouvelle structure informatique, avec création des historiques qui permettront de comparer les évolutions à partir de 1999.	
janv-99	Il ne se passe rien. Tous les magasins présentent une offre par univers, rebaptisés département. Refonte des assortiments.	
janv-99	Les magasins ne sont pas homogènes pour des raisons diverses liées aux circonstances locales, aux projets en cours et aux synergies avec les actions magasins.	

Annexes n° 5B: Stages of the N.S.D.for the Credit Mutuel Anjou

Date	Main Event	Comments
1/6/97	Programme de travail validé par le Bureau Confédéral.	
1/9/97	Réunion de créativité réalisée avec un cabinet conseil Opticom.	Les conclusions sont: Le client doit se sentir privilégié. Développer un contact privilégié, rechercher de la différenciation.
1/9/97	Impact de l'Euro sur la banque et affirmation de la fin du Ni-Ni	Rapport d'une société d'étude pour le compte du Crédit Mutuel
1/10/97	Analyse des implications tarification rémunération.	
1/10/97	Etude facturation-rémunération; Equilibre financiers; Comparatif concurrence; offre; concurrence française; rencontre avec les fédérations.	Etude interne collectant l'information et analysant les implications pour le CM.
1/10/97	Etude des clients sous forme de tables rondes.	
21/10/97	Principes : euro fait et pas prétexte, différents travaux en sous groupe, pédagogie comme base du changement client, innovation comme affirmation manageriale, recherche des attentes clients, feed-back sur les tables rondes, Evocation des contreparties.	Définition de quelques principes directeurs qui seront suivi par la suite.
5/11/97	Compte rendu de la démarche de F Leray.	Examen des résultats basés sur 3 tables rondes, validation de lancement de l'enquête réalisée sur 500 clients. Deux groupes de besoins se dégagent.
6/11/97	Compte rendu réunion de travail conception des offres FAITES PAR LE DIFFERENTES FEDERATIONS.	
21/11/97	Démarrage d'un groupe projet offre travaillant sur un forfait de base prix minimum.	
	Proposition d'une offre en trois forfaits.	Date Non Trouvée
5/12/98	Présentation des trois forfaits arrêtés par le groupe de travail fédéral.	
12/12/97	Affirmation SERVICE PRIX plus REMUNERATION FACTURATION. Définition de l'offre	
18/12/98	Réunion AFECEI, concertation collective, inquiétude quand à La Poste non présente, échange des points de vue sur les positions rémunération, attitude pouvoirs publics, tarifs proposés.	
9/12/98	Poursuite des travaux sur l'offre, Cadrage de l'étude client menée mi janvier 1998, chantier communication.	
15/1/98	Prise de connaissance du dossier national et décision de lancement d'un dossier en interne.	
13/1/98	Mémo sur état de la réflexion à date: convergence globale des banques, définition de l'offre, larémunération, le problème des exclus, le contrat, les groupes tests, la communication,	
14/1/98	Date de lancement 3ème trim 98 pour déconnecter de l'Euro. Principe de trois forfaits.	
1/2/98	descriptif du projet national: rémunération-facturation	

5/2/98	Débriefing sur les conséquences du passage à l'EURO	
25/2/98	Résultats de l'étude G&A	
6/3/98	Récapitulatif des abonnements envisagés, principes de tarification, intitulés des contrats.	
1/3/98	Nouveaux principes tarifaires	Remarques personnelles sur le client qui est oublié.
16/3/98	Proposition d'un outil de simulation financière	
16/4/98	Affirmation d'un engagement de sensibilisation interne, poursuite du travail sur l'offre, risque pour la multi-bancarisation, contraintes informatiques.	
16/4/98	Résume l'ensemble du projet et insiste sur la nécessité de recenser les positions des différentes fédérations. Plus questionnaire aux fédérations sur les forfaits.	
15/6/98	Premiers avis sur les projets de procédures présentés par C Nagy et F Simon	
26/6/98	Bilan de l'enquête de F Leray. 478 entretiens validés. 4 grands segments de clientèle ayant un package préféré et un niveau de prix différent. Les services les plus importants se dégagent ainsi que les optionnels. Lct d'entretiens clients et commerciaux.	La définition de l'offre reste floue,
22/10/98	Définition de l'indépendance de chaque fédération sur le projet en terme de dates et de niveaux de tarification des forfaits.	Tout le long du projet, il sera répété que l'on mène un projet pilote pour le national. En même temps chaque fédération essaye de se différencier des autres, soit en lançant avant soit en adoptant des moyens différents.
27/10/98	Corinne Nagy évoque les problèmes de respect des délais pour lancement septembre. Restent à définir les points suivants: facturation, gestion automatique de l'épargne, a	
1/12/98	Transformation en cours de l'organisation marketing en marketing études et marketing réseau.	
22/12/98	Strasbourg a pris la décision de démarrer plus tôt le projet service prix. Le projet est géré par chaque fédération. Affirmation du nom des forfaits sans test: "comptes euro-préférence".	
15/1/99	Elaboration des procédures de gestion des différents forfaits: exemple modalité de facturation, gestion de l'épargne. A cette date, le principe de lancement est fixé en septembre 1999 ce qui signifie une formation des vendeurs en juillet et une définition de l'offre beaucoup plus tôt.	
22/1/99	Mise en place de l'organisation marketing, disparition de la fonction organisation et mise en place d'une fonction production.	
5/3/99	Nagy présente le problème de la gestion automatique de l'épargne. Cette décision nécessite 200 jours de développement Informatique. Le prix reste à estimer (fourchettes 50 à 100 frs). P Jan indique le projet ne pourra pas être sur le marché avant fin 99	
12/3/99	Décision de lancer au printemps 2000 suite à l'annonce du nombre de jour nécessaires au développement informatique (900 jours).	Ce décalage fait suite à une demande tardive pour ce qui concerne le département informatique. Le problème de l'intégration de ce département dans le projet est clairement posé.
14/5/99	Date de lancement Service Prix reste en incertitude. Le com. Com. se tient donc prêt à intervertir le lancement avec d'autres campagnes de promotion.	

21/9/99	Strasbourg a lancé en septembre 2000, Laval doit lancer rapidement, Lille teste effectivement, CMB en attente. L'expérience de Strasbourg montre l'intérêt d'un niveau d'offre plus bas, dégagé par l'étude de F Leuret. Affirmation de G Bernier sur la date du lancement en mai 00	
14/10/99	Examen de l'offre constituée présentée par F S ET CN. Demande par le comité d'une facturation type france télécom. Demande d'un consultant spécialisé en conduite du changement "pour accompagner la révolution culturelle que supposent ces abonnements".	
15/11/99	Lancement de "l'eurocompte préférence". Cœur de cible: 52 000 ménages. Demande d'un plan de mise en oeuvre par F Simon. L'importance du volume conduit à repousser un plan de campagne IARD.	
16/11/99	Transformation de l'organisation des réseaux d'agences.	
10/12/99	Diverses hypothèses de lancement de Eurocompte préférences sont évoquées. Il faudra choisir avant fin février.(décideur A.M. Cathelineau)	
18/1/00	Etude sur le profil de la client CMA. Inclus la consommation de produits bancaires, le profil, les comportements, la détention de produits d'épargne, de crédits et la satisfaction par rapport aux produits. PAS de définition des attentes, et de données comportementales.	
21/1/00	Une tarification Eurocompte est proposée par C Nagy. Une simulation est demandée sur les résultats de l'application de ces tarifs.	Les simulations ont été faites et fournissent des fourchettes de prix. La décision finale interviendra à quelques jours du lancement, de façon à garder de la souplesse commerciale.
21/1/00	Ciblages de clientèle en prévision du lancement en mai. Une assistance téléphonique est demandée pour le début. Un déroulement de la mise en marché est prévue.	
24/1/00	Rencontre P. Aubray.	
25/4/00	Les procédures sont figées définitivement.	
14/4/00	Rencontre F Simon qui annonce que le projet est repoussé à la rentrée de septembre.	
10/7/00	Rencontre F Leuret qui détaille les études clients réalisées	
15/7/00	Un concurrent, La Poste, est obligé de renoncer à la facturation de ces services sous la pression des clients et de ses propres employés.	Cet événement pèse sur le lancement. Il démontre que les clients sont prêt à réagir comme en 1987. Cet incident incite donc à la prudence dans le lancement et dans le discours. Plusieurs doc publicitaires sont élaborés pour rester libre de choisir au dernier moment.
16/8/00	F Simon détaille les moyens mis en place pour le lancement. Elle développe l'idée que passé une date, les décisions de lancement sont guidées par l'impossibilité de revenir en arrière. Sont mis en place des moyens de formation des vendeurs, les documents commerciaux, les plannings de lancements. Un certain nombre de spécifications restent floues volontairement (PRIX, COMPTE DEBITEURS)	
25/9/00	Lancement de l'"Eurocompte du Crédit Mutuel".	
14/5/99	Date de lancement Service Prix reste en incertitude. Le comité commercial se tient donc prêt à intervenir le lancement avec d'autres campagnes de promotion.	
21/9/99	Strasbourg a lancé en septembre 2000, Laval doit lancer rapidement, Lille teste effectivement, CMB en attente. L'expérience de Strasbourg montre l'intérêt d'un niveau d'offre plus bas, dégagé par l'étude de F Leuret. Affirmation de G Bernier sur la date d	
14/10/99	Examen de l'offre constituée présentée par F S ET CN. Demande par le comité d'une facturation type France Télécom. Demande d'un consultant spécialisé en conduite du changement "pour accompagner la révolution culturelle que supposent ces abonnements".	
15/11/99	Lancement de "l'eurocompte préférence". Cœur de cible: 52 000 ménages. Demande d'un plan de mise en œuvre par F Simon. L'importance du volume conduit à repousser un plan de campagne IARD.	
16/11/99	Transformation de l'organisation des réseaux d'agences.	

10/12/99	Diverses hypothèses de lancement de Eurocompte préférences sont évoquées. Il faudra choisir avant fin février.(décideur A.M. Cathelineau)
18/1/00	Etude sur le profil de la client CMA. Inclus la consommation de produits bancaires, le profil, les comportements, la détention de produits d'épargne, de crédits et la satisfaction par rapport aux produits. PAs de définition des attentes, et de données comportementales.
21/1/00	Une tarification Eurocompte est proposée par C Nagy. Une simulation est demandée sur les résultats de l'application de ces tarifs.
21/1/00	Ciblages de clientèle en prévision du lancement en mai. Une assistance téléphonique est demandée pour le début. Un déroulement de la mise en marché est prévu.

Annexes n°6: The Detailed Final offer of the Credit Mutuel

Tranquillité

Confort

Sérénité

Jeunes

OFFRE DE BASE

LES OPTIONS

- **LE COMPTE DE CHEQUES** en F ou en €. le chéquier envoyé à domicile.

- **LE CONTRAT SOUPLESSE** découvert autorisé à taux préférentiel (-2pts) maxi. 5 000 F (762.24 €).

- Exonération d'agios pour l'équivalent d'un découvert de 1 000 F (152.45 €) pendant 7 jours/mois
- Assurance décès 1 tête d'un capital égal au montant du découvert autorisé.

- **LA CARTE MAESTRO** (Carte internationale, appel au 1^{er} F) Assistance et assurance liées à la carte.

- **ASSURCARTE, NIVEAU B** chèquiers et cartes détenus au Crédit Mutuel. Exonération des frais d'opposition en cas de perte ou de vol de la carte ou du chéquier.

- **SUPPRESSION DE DATES DE VALEUR**

- **EXTRAIT DE COMPTE MENSUEL**

- **DOMITEL, DOMIBANQUE KIOSQUE, CYBERMUT JEUNES** ⁽¹⁾

- **EPARGNE FACILE**, gestion automatique des excédents de trésorerie.

- **MONTANT DE FRANCHISE** sur opérations tarifables : x F (y €) par mois.

- **UNE ASSURANCE DECES 2^{ème} TETE**

- **AUTRE CARTE BANCAIRE** d'un niveau supérieur (Eurocard ou visa - DI - DD, Gold, Visa 1^{re}).

- **UNE 2^{ème} CARTE BANCAIRE**

- **ASSURCARTE, NIVEAU C** (cartes et chèquiers détenus dans toutes les banques).

- **AUTRE PERIODICITE D'EXTRAITS DE COMPTE**, bi-mensuel, hebdomadaire ou journalier.

- **AUTRE SERVICE DE BANQUE A DISTANCE** de niveau supérieur Domibanque, CyberMUT Jeunes plus ⁽¹⁾, CyberMUT Eco ou CyberMUT Confort.

- **2^{ème} SERVICE DE BANQUE A DISTANCE** d'un niveau supérieur au niveau kiosque.

- **RESERVE PREFERENCE**, crédit revolving à taux préférentiel.

- **CARTE PREFERENCE**, carte associée à la Réserve Préférence : une 1^{re} et une 2^{ème}.

- **LE COMPTE DE CHEQUES** en F ou en €. le chéquier envoyé à domicile.

- **LE CONTRAT SOUPLESSE** découvert autorisé à taux préférentiel (-2pts)

- Exonération d'agios pour l'équivalent d'un découvert de 2 000 F (304.90 €) pendant 7 jours/mois
- Assurance décès 1 tête d'un capital égal au montant du découvert autorisé.

- Assistance et assurance liées à la carte.

- **ASSURCARTE, NIVEAU B** chèquiers et cartes détenus au Crédit Mutuel. Exonération des frais d'opposition en cas de perte ou de vol de la carte ou du chéquier.

- **SUPPRESSION DE DATES DE VALEUR**

- **EXTRAIT DE COMPTE MENSUEL**

- **DOMITEL, DOMIBANQUE GESTION, CYBERMUT JEUNES** ⁽¹⁾

- **EPARGNE FACILE**, gestion automatique des excédents de trésorerie.

- **MONTANT DE FRANCHISE** sur opérations tarifables :

- **UN COMPLEMENT AU CONTRAT SOUPLESSE** d'un montant maximum de

- **UNE ASSURANCE DECES 2^{ème} TETE**

- **AUTRE CARTE BANCAIRE** d'un niveau supérieur (Eurocard ou visa DD - Gold, Visa 1^{re}).

- **UNE 2^{ème} CARTE BANCAIRE**

- **ASSURCARTE, NIVEAU C** (cartes et chèquiers détenus dans toutes les banques).

- **AUTRE PERIODICITE D'EXTRAITS DE COMPTE**, bi-mensuel, hebdomadaire ou journalier.

- **AUTRE SERVICE DE BANQUE A DISTANCE** de niveau supérieur CyberMUT Jeunes plus ⁽¹⁾, CyberMUT Eco ou CyberMUT Confort.

- **2^{ème} SERVICE DE BANQUE A DISTANCE** d'un niveau supérieur au niveau kiosque.

- **RESERVE PREFERENCE**, crédit revolving à taux préférentiel.

- **CARTE PREFERENCE**, carte associée à la Réserve Préférence : une 1^{re} et une 2^{ème}.

- **LE COMPTE DE CHEQUES** en F ou en €. le chéquier envoyé à domicile.

- **LE CONTRAT SOUPLESSE** découvert autorisé à taux préférentiel (-2pts)

- Exonération d'agios pour l'équivalent d'un découvert de 3 000 F (457.35 €) pendant 7 jours/mois
- assurance décès 1 tête d'un capital égal au montant du découvert autorisé.

- Assistance et assurance liées à la carte.

- **ASSURCARTE, NIVEAU B** chèquiers et cartes détenus au Crédit Mutuel. Exonération des frais d'opposition en cas de perte ou de vol de la carte ou du chéquier.

- **SUPPRESSION DE DATES DE VALEUR**

- **EXTRAIT DE COMPTE MENSUEL**

- **DOMITEL, DOMIBANQUE GESTION, CYBERMUT JEUNES** ⁽¹⁾

- **EPARGNE FACILE**, gestion automatique des excédents de trésorerie.

- **MONTANT DE FRANCHISE** sur opérations tarifables :

- **UN COMPLEMENT AU CONTRAT SOUPLESSE** d'un montant maximum de

- **UNE ASSURANCE DECES 2^{ème} TETE**

- **AUTRE CARTE BANCAIRE** d'un niveau supérieur (Gold ou Visa 1^{re}).

- **UNE 2^{ème} CARTE BANCAIRE**

- **ASSURCARTE, NIVEAU C** (cartes et chèquiers détenus dans toutes les banques).

- **AUTRE PERIODICITE D'EXTRAITS DE COMPTE**, bi-mensuel, hebdomadaire ou journalier.

- **AUTRE SERVICE DE BANQUE A DISTANCE** de niveau supérieur CyberMUT Jeunes plus ⁽¹⁾, CyberMUT Eco ou CyberMUT Confort.

- **2^{ème} SERVICE DE BANQUE A DISTANCE** d'un niveau supérieur au niveau kiosque.

- **RESERVE PREFERENCE**, crédit revolving à taux préférentiel.

- **CARTE PREFERENCE**, carte associée à la Réserve Préférence : une 1^{re} et une 2^{ème}.

- **LE COMPTE DE CHEQUES** en F ou en €. le chéquier envoyé à domicile.

- **LE CONTRAT SOUPLESSE** découvert autorisé à taux préférentiel (-2pts)

- Exonération d'agios pour l'équivalent d'un découvert de 3 000 F (457.35 €) pendant 7 jours/mois
- assurance décès 1 tête d'un capital égal au montant du découvert autorisé.

- Assistance et assurance liées à la carte.

- **ASSURCARTE, NIVEAU B** chèquiers et cartes détenus au Crédit Mutuel. Exonération des frais d'opposition en cas de perte ou de vol de la carte ou du chéquier.

- **SUPPRESSION DE DATES DE VALEUR**

- **EXTRAIT DE COMPTE MENSUEL**

- **DOMIBANQUE GESTION, CYBERMUT JEUNES**

- **EPARGNE FACILE**, gestion automatique des excédents de trésorerie.

- **MONTANT DE FRANCHISE** sur opérations tarifables :

- **UN COMPLEMENT AU CONTRAT SOUPLESSE** d'un montant maximum de

- **AUTRE CARTE BANCAIRE** d'un niveau supérieur (Eurocard ou Visa DD - Gold ou Visa 1^{re}).

- **UNE 2^{ème} CARTE BANCAIRE**

- **ASSURCARTE, NIVEAU C** (cartes et chèquiers détenus dans toutes les banques).

- **AUTRE PERIODICITE D'EXTRAITS DE COMPTE**, bi-mensuel, hebdomadaire ou journalier.

- **AUTRE SERVICE DE BANQUE A DISTANCE** de niveau supérieur CyberMUT Jeunes plus ⁽¹⁾, CyberMUT plus Eco ou CyberMUT Confort.

- **2^{ème} SERVICE DE BANQUE A DISTANCE** d'un niveau supérieur au niveau kiosque.

- **RESERVE PREFERENCE**, crédit revolving à taux préférentiel.

- **CARTE PREFERENCE**, carte associée à la Réserve Préférence : une 1^{re} et une 2^{ème}.

LES DECONNECTABLES

- **ASSURCARTE**, avec impact sur le prix. Supprime l'exonération des frais d'opposition en cas de perte ou vol. carte ou chéquier

- **LE CONTRAT SOUPLESSE**, avec impact sur le prix. Supprime l'exonération d'agios. Supprime l'assurance décès

- **ASSURCARTE**, avec impact sur le prix. Supprime l'exonération des frais d'opposition en cas de perte ou vol. carte ou chéquier

- **LE CONTRAT SOUPLESSE**, avec impact sur le prix. Supprime l'exonération d'agios. Supprime l'assurance décès

- **ASSURCARTE**, avec impact sur le prix. Supprime l'exonération des frais d'opposition en cas de perte ou vol. carte ou chéquier

- **LE CONTRAT SOUPLESSE**, avec impact sur le prix. Supprime l'exonération d'agios. Supprime l'assurance décès

- **ASSURCARTE**, avec impact sur le prix. Supprime l'exonération des frais d'opposition en cas de perte ou vol. carte ou chéquier

⁽¹⁾ jusqu'à 26 ans

**Annexes n°7: ORGANIZATIONAL CHANGE AS THE CONCEPTUAL
FRAMEWORK FOR SERVICE INNOVATION:Involvement for further
Research (5 th INTERNATIONAL RESEARCH SEMINAR IN SERVICE
MANAGEMENT, I.A.E. Aix en Provence).**

**5 th INTERNATIONAL RESEARCH SEMINAR IN SERVICE
MANAGEMENT
I.A.E. Aix en Provence**

**ORGANIZATIONAL CHANGE AS THE CONCEPTUAL FRAMEWORK
FOR SERVICE INNOVATION:
Involvement for further Research**

STEVENS Eric*

ABSTRACT: This paper aims at defining a conceptual framework for service innovation. The analysis of the servuction process underlines the links that must be established between service innovation and organisational change. Three main perspectives of organizational change are then reviewed: the individual perspective, the structuralist approach and the interactionist perspective. They all provide interesting guidelines at further investigation on service innovation. Organizational structures must be considered as first contingency variables. Organizational Learning Skills should be considered as a competitive advantage. The service innovation should be considered as embedded in the organizational “ sensemaking ” process. The question that literature on organizational change may constitute a relevant framework for further research is then considered.

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Product development is nowadays considered to have a strong impact on firm's performance. As innovation induces a renewal of the organisational procedures, it may be a major way of adaptation, diversification and recreation of the firm. So the ability to develop new products in order to match evolving markets could be considered as an essential process of the survival and the development of the firms (Brown, S.L., Eisenhardt, K.M, 1995)¹. As asserted in the UK Government White Paper on Competitiveness (1994)²: "Innovation -The successful exploitation of new ideas - is essential for sustained competitiveness and wealth creation. A country aiming to keep ahead of its competitors needs companies which innovate".

Developing new services, as in product business, is becoming a crucial activity to succeed in in the marketplace, whatever the firm. It is stated by Jallat (1992)³ that innovative service firms show better results in terms of turnover, market share and profit. As Cowen emphasised (1988)⁴ but without bringing quantitative evidence, the possibility for competitors to copy rapidly must shorten life-cycle and induce large scale copying practices. Initial investment must be altered by the difficulty of acquiring a lasting competitive advantage and, though service literature doesn't give example of this, return on investment goals should probably have a shorter period than for products. This should also advocate that time is a key factor of successful innovation.

Nevertheless, the validity of a theoretical framework developed for the products remains to be validated for the services. It is asserted by Berry (1980)⁵ that "services are different" by being intangible, heterogeneous and perishable. Moreover, the way they are produced mainly differ from a classical operation process. Finally the way they are delivered involves a strong "human" component. According to those differences, research remains to be done on service innovation. As underlined by Drazin and Schoonhoven (1996)⁶: "Although service organisations and industries are a major economic force in the contemporary U.S. economy, research and theory exploring innovation in service delivery are rare....Focused research on the lower-cost, non technological innovation typical of service industries may reveal theoretical insights into organisational context issues not yet conceptualised".

This paper will concentrate on the involvement of organisational research on the development of service innovation. To do so, we will first of all analyse the main characteristics of the servuction process and analyse the involvements on the service innovation. In the second part a review of organisational change literature will be done. Then a framework for research in service innovation will be proposed.

The servuction process: involvements for service innovation.

The understanding of the organizational component of innovation requires going further into the production process. To provide a global understanding of what is

produced during this process, Eiglier et Langeard (1985)' proposed a model, called by a neologism "servuction" built in analogy with "production". This model, as shown below, consists in the decomposition of service activity into four distinct main components that are partly or totally affected one by the others.

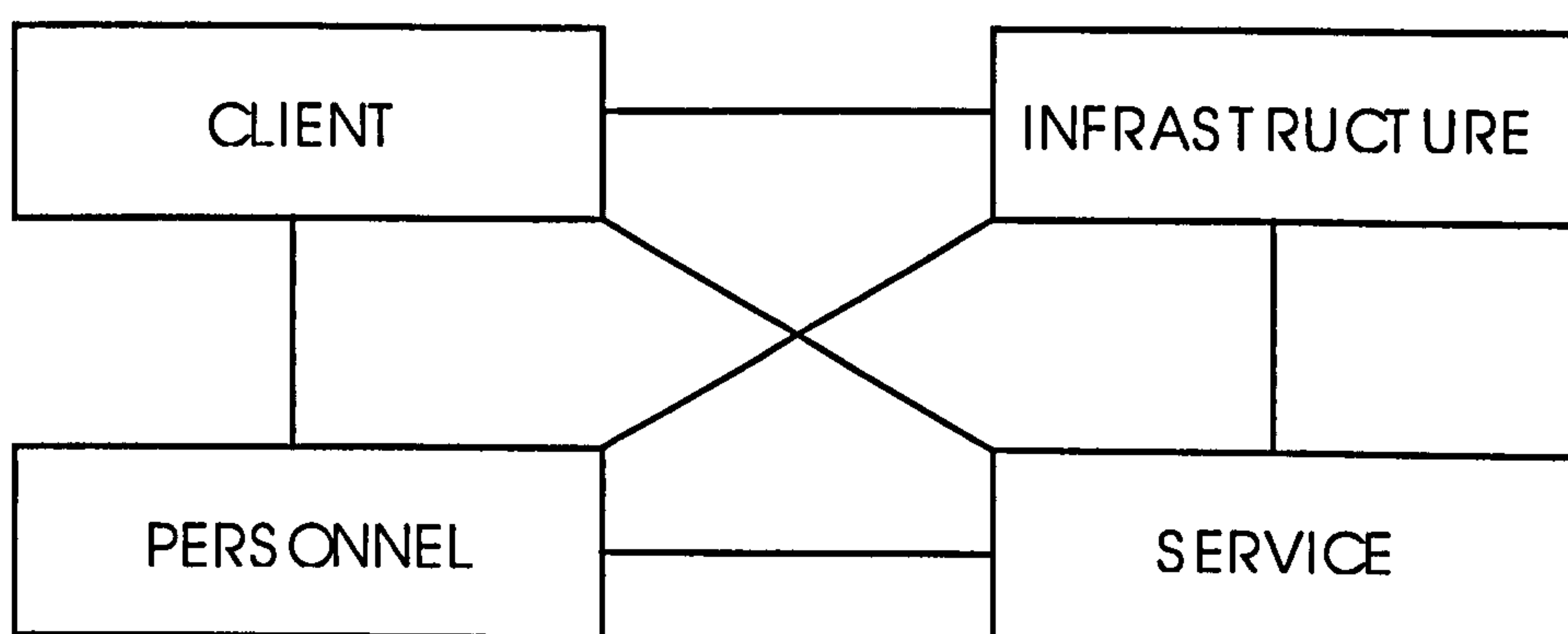
Eiglier and Langeard highlight the interaction as the basis of the system. They insist on the fact that, in difference with the production system, each part of the system interacts with all the other parts. In that sense, service innovations may lie in one of the components of the system, but also and often at the same time, in the relationship between two or more of them. As an example, the choice to provide financial products only by mail or telephone may be considered as a change of process, supported by infrastructure innovation. Nevertheless, it also requires innovation in terms of commercial behaviour between customers and employees.

So according to this view of servuction, innovation may be made of:

- a change in the infrastructure, when it is perceived by the consumer.
- a change in personnel function or role.
- a modification in the client role (the part of the delivery process the customer will have to play).
- a change in the nature of the different stages of the process or a modification of the interaction process in itself.

Therefore it could be assumed that service innovation may be different from product innovation and necessitate a separate theory.

The model of servuction:



The main consequences of this systemic concept for innovation are of three types. They assume the inseparability of the servuction components as follow:

- Inseparability of Production and Consumption.
- Inseparability of Production and Distribution
- Inseparability of Creation and Production

This concept of inseparability illustrates the systemic nature of the servuction process. The implications for innovation are of prime importance.

A- Production and consumption are impossible to divide:

The deep nature of service activities is to provide intangibles. Most of the time, the servuction process means bringing to the customer utilities rather than objects. The firm's proposition is not embedded in a material device which the client can bring with him and use after delivery. It is the creation of successive stages that are delivered through an interaction process. The ways the interactions are built all along this delivery process and the creation of the supportive infrastructures which enables them to constitute the firm's Know-How.

Because of this constitutive nature of the service, it is impossible to produce services without the participation of the client. It involves, as Bowen said (1986)⁸, to consider that the client is part of the service firm, part of the service production. This means that servuction would be impossible without the client's tacit knowledge of the process. The example of the initial problems encountered by bank's customers during the use of the first electronic cash dispensers illustrate this point: the client must be considered as the co-producer of the service. He is, as the other members of the organisation, in charge of an adapted answer throughout the process. This means that an innovation policy must integrate the change in the part of the service that is produced by the client. This could mean for example the training of its potential customers. They have to learn how to behave, to be satisfied by the result of their interaction with the organisation.

B- Production and distribution can't be divided.

As the process of servuction closely links the client and the personnel, the geographical extent of service delivery obliged most firms to create "multiple servuction units". When production companies use different channels, made up of independent retailers, service firms are obliged to duplicate the servuction process. The exemplary "Mc Donalds" system is based on the training of the franchisee during a period of months on the servuction procedures. Then, if the methodologies are well integrated, different sites are proposed to the franchisee. Such a training period enables the products, processes and behaviour to be standardised.

In consequence, Innovation, to be delivered, must be reproduced all over the different sites. This constitutes a major difference with the product industry. The vision of a new product created in one single site and delivered to the client through neutral channel must be replaced by a more complex process. The new service must be adopted by each servuction site. This means that each "adopter" must understand the way procedures are to be settled, adapt those rules to the site's specificity and train the employees so that they understand and learn the change. It means also that the implementation will probably be very sensitive to the employee's willingness to adopt the

change. In this new approach of innovative phenomenon, organisational factors should be strongly correlated with development speed.

C- Production and Creation can't be splitted

The two previous points underline the deep difference between product and service innovation. The change of a process concerns the entire system. This means that for each stage, the internal and external interactions have to be redesigned. All the coordination system must be recreated. This will be achieved by a strong interaction process rather than by the individual effort of the inventor to create something new. Service innovation doesn't rely on technology, even if they integrate part of the technological means. It relies mainly on new organisational choices that enable to produce different process. It means that innovation must be treated by the organisation as a whole, rather by a specialised department as could be the traditional R&D department. In other terms, service innovation must be co-produced by internal and external members of organization through multiple interactions. It also means that enabling or inhibiting factors should be of an organizational nature.

Case Studies on service innovation.

Though not formally identified by the authors, the three features of service innovation can be found in different case studies developed in this field. Chosen in service activities, such as banking or distribution, they highlight the organizational component of innovation.

Analysing a success in the financial service industry, Edgett and Jones (1991)⁹ underline that success is above all due to organisational skills. In their description of the "National and Provincial Building Society" company (N & P), forced by a harder competitive environment, decides to restructure the network into four regions and to re-organise its activity into four separate main divisions. So the creation of a strong marketing department allows more development than before. Furthermore, product manager methodology involves to submitting a business plan to approximately twelve people of various departments. As quoted by the authors describing this procedure : "no precedent existed to gain the approval and the cooperation of other departments". It seems that new services are before all the result of a cooperation rather than the result of a "champion" talent, either individual or departmental. As an example Edgett and Jones consider both the high commitment of senior managers and the high level of personal contact maintained by the product manager throughout the project as factors of success.

The same statement concerning organisational skills is made by Hart and Service (1993)¹⁰. By leading an "action research" in a firm distributing electromechanical and electronic components, they could establish that a change in organisation is necessary to develop a shorter new services development successfully. In fact, considering

sequential N.S.D used by this firm before they changed it, they reported how communication problems and divergent long term visions between the different departments, marketing, purchase, laboratory and packaging, induced serious delays in the launching schedule. Effective N.S.D process supposes a "functional integrative perspective", setting up less formal but more communicative organisation, improving shared information, decision making agreement and decision making authority agreement.

The organisational change induced by innovation is underlined by A. Raesfeld Meijer, K. de Ruyter and P Cabo (1996)". They developed a historical case study in service activities by developing the sociometrics approach of Moreno. They tried to measure the intensity in communication and shared perceptions between the team members before the start of one innovative project and after the implementation. One of the main explanations was that the innovation induces a change in the informal communication networks which excluded two executives. This results in strongly divergent perceptions of what was to be done and finally led to the rejection of the innovation. This research underlines yet again the organisational change as constitutive of the innovative service process.

In the same way, Berry (1980) underlined that processes cannot be separated from the person of the seller. Developing a new service without the consumer's implication in the process may turn to disillusion. Without a consumer, service simply couldn't exist and couldn't even be tested. Though this statement contradicts the fact that most service companies don't have strong marketing departments (Herman, 1981; Morgan, 1989)¹², a direct or indirect involvement seems to be necessary. Though no work seems to relate this case, post launch flexibility and adaptation should be one way of achieving this process by the inclusion of client needs.

In those cases, either processual or even based on technology supporting the process, innovation requires organisational skills as support of interaction. The ability to build appropriate team (motivated, creative and skilfulness), and to organise their internal and external interaction may be considered as one of the key success factors. So the research on innovation must no longer be focused on the development process in itself, but on the process of organisational change.

As we saw before, innovation phenomena in service activities requires an organisational framework to be investigated appropriately. Surprisingly, this statement, though asserted in many publications, didn't lead to specific research work. On the one hand empirical investigation such as De Brentani's (1989, 1990, 1991, 1995)¹³, investigates haphazardly on success and failure factors, without a strong theoretical approach of organisation. On the other hand, cases studies present some examples of the impact of organisation on the development process but without any conclusion on the necessity of further organizational research. So a lot of work remains to be done to link service innovation and organizational factors. To do so, we intend to review organisational literature on organizational change and will try to relate it to service innovation.

Organisational Innovation

Since the late 1950's, there has been a growing interest in innovation, within and by organisation. A voluminous literature tends to melt different definitions and then to mix organizational change and innovation. Based on organisational behaviour but also sociological and psychological literature, King and West (1987)¹⁴ characterise organisational innovation as follows:

- .An innovation is a tangible, process or procedure within an organisation. A new idea may be a starting point for an innovation but cannot be called an innovation in itself.
- .An innovation must be new to the social setting (e. g. work group, department or whole organisation) within which it is introduced, although not necessarily to the individual introducing it.
- .An innovation must be intentional and not accidental.
- .An innovation must not be a routine change.
- .An innovation must be aimed at producing benefit to the organisation, some sub-section of it and or the wider society.
- .An innovation must be public in its effects.

Though this definition presents weaknesses as underlined by Nicholson (1990)¹⁵, it fits well with a common usage amongst practitioners and academics as stated by King and Anderson (1995)¹⁶. In such a perspective, innovation is no more viewed as the creation and adoption process of technology but as the creation and the adoption process of new organizational structures. This approach relies on an opposite movement. The change is conceived as the set up of new productive combinations, including in some cases the adoption of new technologies.

Because of the amount of research carried out on organisational innovation, results must be classified into three different perspective of action as asserted by Pierce and Delbecq (1977)¹⁷, King and Anderson (1995) and recently by Carol Slappendel (1996)¹⁸:

- The individual perspective asserts that innovation originate from individual actions and creative performance.
- A structuralist approach highlights structure and group influences on development and innovation.
- Interactionist perspective assert that innovation is the results of groups characteristics and individual actions.

As core concepts but also research strategies and main assumptions are mainly different, they must be examined independently.

A-Individual innovation

An individualist perspective on organisational innovation asserts that individuals are major contributors to the development process. It is commonly accepted that innovative activity is internally promoted by champions that are supposed to influence the entire process with ideas of their own. The concept of the "entrepreneur" asserted by Schumpeter (1961)¹⁹, provides a good illustration of the supposed role of the individual. The same perspective is adopted implicitly by strategic management schools of thought which assume the importance of the individual as strategist or architect of the change and innovation management. Research in that perspective is historically focused on individual characteristics supposed to be relative to innovative behaviour and ideas.

A.1- Personality factors

A core of personality traits has emerged from different research areas. For example, high valuation of aesthetic qualities in experience, attraction to complexity, high energy, autonomy, intuition, self-confidence and energy are related as correlated with creative behaviour by Barron and Harrington (1981)²⁰. Amabile (1988)²¹ reported that persistent curiosity, energy and intellectual honesty were identified by scientists as being important for creativity. It was also found by Amabile (1988), Mumford and Gustafson (1988)²² that intrinsic motivation and knowledge may contribute to major or incremental creativity. This approach results in psychological selection tests (as "Kirton Adaption Innovation Inventory" or "16 PF" and "Occupational Personality Questionnaire" quoted in King and Anderson's book), but also in creativity enhancement techniques like brainstorming or synectic.

But, though there is a general agreement that personality is related to creativity, Woodman, Sawyer and Griffin (1993)²³ assert that personality "trait" theories seems to be unable to forecast the effective behaviour in the organisational context. Moreover, the cognitivist approach tends to hinder the importance of personality characteristics.

A.2- Cognitivist approach

As innovation may be considered as the result of non-routine process, the question of how existing ideas may be combined in a creative way refer to cognitive approaches. As example Carrol (1985)²⁴ found that cognitive abilities such as ideational fluency, or associative fluency, may be correlated to production of new ideas. In such a sense, limits of creativity should be founded only within the limits of cognitive abilities. Infinite capacity means that a substantial rationality (the ranking of all opportunities and the choice of the best alternative) may be reached. Working on that hypothesis, Simon (1955, 1956)²⁵ invalidated the substantial rationality of the firm's actors. Explaining the way individuals investigated innovative options, March and Simon (1958)²⁶ underlight that the search will be limited in scope and reduced to only a few options.

The concept of bounded rationality explains the position of the individual who is able to decide but with incomplete information and with limited treatment capacity. In such a perspective, the choice of the appropriate options rely on the individual choices *and* on the organisational preferences. If there is no more "one best way", the decision process may be considered as the result of interaction between the individual and its internal and external environment. In this perspective, March (1978)²⁷ asserts that "contextual rationality" must be considered as an entire way of making decisions.

A.3- Main limits of the individual perspective.

This last statement enables to have a better understanding of the criticisms addressed to the individual approaches. First of all, the approaches of March, limit the scope of individual talent. As innovative choices couldn't be made of the best rational choices, they will result from a collective, situational standpoint. In such a sense, even with talented individuals, innovation is above all a process involving many actors. So, it will be very difficult to link individual capacities that are a generation of new ideas and decision making with final choices made by the group. Do those ideas meet internal preferences ? Do they challenge the perception of lacks between the goals of existing procedures and their results ? Could they support a coalition of individuals interested in the result of the process. If so, as said by March (1962; 1975)²⁸, innovation will be appropriately sustained and rationalised Ex-Post. The link between creative skills and result of idea generation is far from being causalistic. As asserted by Saren (1987)²⁹, by divorcing individual skills and activities from the other individuals and from the organisation, that framework provides an incomplete view of the innovative phenomenon.

Moreover, Amabile (1983)³⁰ highlight several studies which provide the evidence of the effects of social inhibition and modelling on individual creativity. That statement provides an other limit of the individual perspective. If individual performances are affected by collective thinking as culture and existing models, then the explanation of innovation by individual skills will necessarily be limited and then must be completed by a structural approach.

Such statements advocate a collective analysis of service innovation. So research should investigate the way individuals integrate collective thinking, rather than being focused on individual behaviour and thinking. How do they contribute to it, how are they constrained by it, and by which collective structures, would be the most fruitful to investigate.

B. Structural innovation

Numerous research streams investigate the relations between organizational factors and innovative results. The approach adopted by those streams " share a

common deterministic orientation by which organisational behaviour is seen to be shaped by a series of impersonal mechanisms that act as external constraints on actors " (Astley and Van de Ven , 1983 , pp 248, Quoted in the C. Slappendel article)³¹. The question is therefore to identify organizational features that induce innovative behaviour.

B.1. Main results

Damanpour (1991)³² reviewing previous research works (23 empirical studies, 21 articles, 2 books), identified the following determinants : Specialisation, Functional differentiation, Professionalism, Normalisation, Centralisation, Managerial attitude towards change, Managerial tenure, Technical knowledge resources, Administrative intensity, Slack resources, External communication, Internal communication, Vertical differentiation. Such a choice of variables is of prime interest because it enables us to relate a large range of indirect component of organisation such as size or even complexity.

Relationship between organizational determinants and Innovation (Damanpour, 1991)

Independent variables	Expected relationship	Reasons for expectations
Specialization	Positive	A greater variety of specialists would provide a broader knowledge base and increase the cross-fertilisation of ideas
Functional differentiation	Positive	Coalition of professionals forms in differentiated units that both elaborate on and introduce changes in the units technical systems and influence changes in their administrative systems.
Professionalism	Positive	Increase boundary spanning activity, self confidence, and a commitment to move beyond the status quo.
Formalization	Negative	Flexibility and low emphasis on work rules facilitate innovation.
Centralisation	Negative	The concentration of decision making authority prevents innovative solutions, while the dispersion of power is necessary for innovation.
Managerial attitude toward Change	Positive	Managers favourable attitude toward change leads to an internal climate conducive to innovation.
Managerial Tenure	Positive	The longevity of managers in their jobs provides legitimacy and knowledge of how to accomplish tasks, manage political processes and obtain desired outcomes.
Technical knowledge resources	Positive	The greater the technical knowledge resources, the more easily new technical ideas can be understood and procedures for their development and implementation attained.
Administrative intensity	Positive	A higher proportion of managers facilitate innovation because the successful adoption of innovations depends largely on the leadership, support and coordination managers provide.
Slack Resources	Positive	Slack resources allow an organisation to purchase innovations, absorb failure, bear the costs of instituting innovations, and explore new ideas in advance of an actual need.
External communication	Positive	Environmental scanning and extra-organisational professional activities of members can bring innovative ideas.
Internal communication	Positive	Facilitates dissemination of ideas within an organisation and increases their amount and diversity, which results in the cross-fertilisation of ideas.
Vertical differentiation	Negative	Hierarchical levels increase links in communication channels, making communication between levels more difficult and inhibiting the flow of innovative ideas.

One of the main findings of this work is that the results were consistent with Burns and Stalker's findings. Though not formally devoted to innovation, their research emphasises the link between organisation characteristics and their capacity to react to a moving environment. Organistic configuration enables a fast adaptation to a changing context due to the spread of commitment all over the firm, to a strong network structure and a continual redefinition of individual tasks with other. To confirm that statement Paollillo and Brown (1978)³³ found that the results of the R&D department were negatively correlated with the number of supervisory levels. Moreover, Katz and Allen (1985)³⁴ found that appropriate separation of role between functional and project

managers in a matrix R&D team provides better innovative results. The reason for that conclusion is that engineers fear that evaluative judgements given by functional managers may depreciate non-routine behavior. On the other hands, rewards given by project managers may integrate innovative results even if obtained with non-routine or "orthodox" procedures.

The results developed by Damanpour also support a "dual-core" model developed by Daft (1973, 1989)³⁵. According to that model, the mechanistic structure is appropriate for administrative innovations, which are defined as the change of organizational structure and administrative processes. Organic structure however is considered as facilitating technical innovations which pertain to product, services and production process technology. This statement means that administrative innovation should be facilitated by organizational features such as lower complexity (lower specialisation, differentiation and professionalism), higher formalisation and centralisation, lower internal and external communication and higher vertical differentiation. The research led by Kimberly and Evanisko (1981)³⁶ during the implementation stage in service activities gives confirmation of this thesis. It highlights similar, though moderate, differences between administrative and technological innovation.

Results are also given for service activities by the Damanpour research. It was found that vertical differentiation (positive correlation), managerial attitude towards change (positive correlation), specialisation (positive correlation) are correlated with organizational innovation. Nevertheless, distinct organizational features associated with innovation in manufacturing and services allow to build two distinctive theories. When "standardisation of work processes" (formalisation) hinders manufacturing innovation, it facilitate the innovation rate in service companies. Similarly, vertical differentiation (the number of hierarchical levels) affect manufacturing activities negatively and services positively. Though it is not formally asserted, these statements present a great similarity with the dual core model conclusions.

Nevertheless, such statements do not lead Damanpour to consider this kind of innovation as primary contingency variable. Organisational types, as may be structures or strategies, impact to some extent on the kind and nature of innovativeness. For example in the Mintzberg definitions, the dual core model applies better to a "bureaucratic machine" organisation rather than to an "adhocratie". In the first structure, technical and administrative innovations are achieved in separate parts of the structure, when administrative and technical cores are mixed in the second. So, as underlined by Damanpour, there is a necessity to integrate further research into the organisational type as primary contingency factors.

B.2- Limits of structural approach

As seen above, the structural approach describes organizational features such as objective realities. Links are established through multivariate analysis, between these factors and the innovation rate over a given period. Nothing is said about the processes

by which organizational patterns are generated, modified and sustained. As an example, Burkhardt and Brass (1990)³⁷ found that the process of innovation altered the structure and power roles of organisational members. If organisational factors which influence occurrence of innovation clearly may be identified, the way the process happens remains impossible to describe by using such an analytical model. Understanding the reasons of organisational change supposes investigating other models such as for example the four basic theories of change developed by Van De Ven and Poole (1995)³⁸ but also on interactionist perspective.

Reviewing the different perspectives, C. Slappendel states that the research used is based on the variance of several independent variables. Tested on a large sample of organisations, the results provide a good basis for statistical generalisations. However, such methodologies present weaknesses in the operationalisation of key variables, particularly for innovation, in the inadequate control over the interaction effects and of the problems of measurement of structural variables.

Finally, as underlined by C. Slappendel, the individualist and the structuralist perspectives are insufficient to relate the entire innovative phenomenon. Focused exclusively on the analysis of the individual, the research forgets to relate important changes of structure and context, which may favour particular behaviour of the individual responsible for the process. Similarly, the structuralist perspective may forget to describe the contribution of the individual all along the process. Such an incomplete approach may lead to simplistic views of the innovative process. To complete the understanding of the innovative phenomenon suppose integrating its process of creation and development, and then to change research methodologies. This other way may be considered as the interactionist perspective.

C- Interactionist perspective

As previous works do not provide accurate views on the process of innovation in itself, some academics such as Dows and Mohr (1976)³⁹ and Van de Ven and Rogers (1988)⁴⁰ advocate an extensive examination of the process, driven by a dynamic continuous conception of change. The first results based on empirical case studies tend to draw a complex, non-linear and non-rational process.

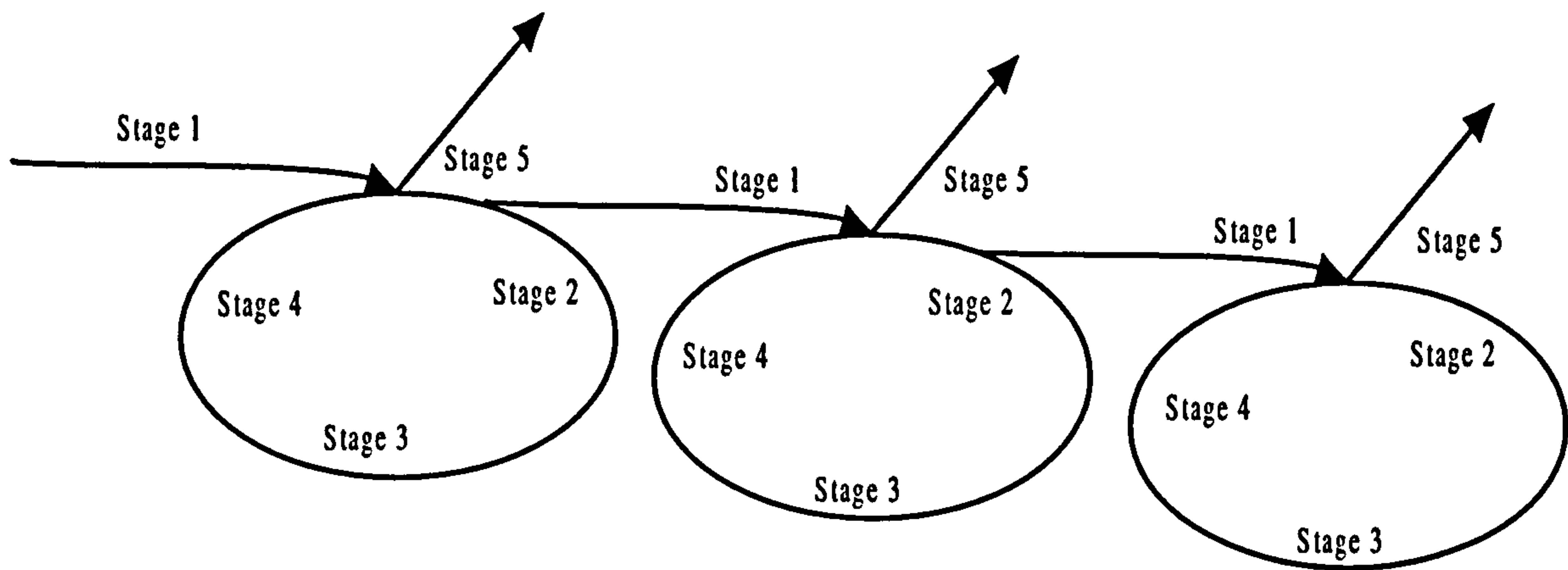
Schroeder and Al (1989)⁴¹ state six main observations. First, innovation and change are initiated by a dissatisfying conditions as the loss of leadership or the arrival of new competitors. Second, the initial idea is not linearly developed but may proliferate into a flow of multiple ideas. Third, as a result, unpredictable setbacks and surprises may occur all along the process. Fourth, as a change is a continual process, new ideas will coexist with old practices before being integrated and transformed by adoption. Fifth, the organisation may be transformed and adapted to the integration of new ideas. Six, the influence of the managers positioned over the project team may be critical. This model, tested latterly by King (1992)⁴², invalidate linear approaches of change such as the one of Zaltman et al (1973)⁴³. To some extent, but in a different field, these

statements invalidate the state gate system developed by Cooper (1988)⁴⁴ and also the new product development process as presented by Kotler (1994)⁴⁵. For example, according to the Schroeder and al findings, the new product development is probably initiated by a statement of dissatisfaction. So innovativeness, rather than being a creativity game should rely on the capacities of the organisation to develop strong environmental attention through the appropriate indicators.

This framework seems to fit very well with the one proposed by Akrich, Callon and Latour (1988)⁴⁶ for innovation process. Their analysis, as main work done in an interactionist perspective, are built on longitudinal in-depth case studies of success and failures in a large scope of innovation like the Post-It, a new computer (1982)⁴⁷, the launching of new artificial leather (1979)⁴⁸. Through the different histories related, a better understanding of the entire process is given. The authors asserted the innovation process as being made of a multiplicity of heterogeneous and complex decisions. Taken by a great number of different and often opposite groups, it is impossible during the process to identify the one which will be the most important and relevant for the final result. Substantial rationality is therefore impossible, as incertitude is the essence of an innovative process. The "One best way", often developed to tell the story of successful innovation, is seen as the need to justify, after the phenomenon, the decisions taken before. At the opposite of a linear program, the entrepreneur is assailed with contradictory information and advice. He must take decisions without the help of clearly identified procedures. In such a context, the success can't be defined as the adoption of the most efficient solutions adopted *in general* but from the point of view of the actors of the process themselves.

Longitudinal case studies show how adoption is linked to the interest of the adopter, to their own understanding of the way the innovation may contribute to their own activity. External consideration (such as that of an engineer) of the interest of a new product or service may turn into disillusion. In the interactionist perspective, the adoption process must be seen through the involvement and interests of the adopters. As stated by the authors, "The involvement model describes the way an innovation is adopted and how it spreads progressively to achieve success. Socio-technical analysis underlines that the adoption process is an adaptation process. Any production innovation exists in general. It must be transformed according to the specificities of the plant where it is introduced. *To adopt an innovation means to adapt it.* Then the authors focused their analysis on the process and on the way people interact to adopt and adapt innovation. The result of this research is a process described as a "whirling process" made of successive development loops.

The "Innovative Whirling Process". (Source Callon-Latour)



- Stage 1: First Ideas.
- Stage 2: First assessments (technical, financial, marketing).
- Stage 3: Prototype.
- Stage 4: Confrontation to the environment and
- Stage 5: Either diffusion (adoption by actors) or redefinition and research of other partners or ideas.

The central idea developed through case studies tends to show that the process is achieved only when a large numbers of actors (internal and external) are in a situation where there is an interest in the adoption of the product. As the authors describe the success as an adoption process, the innovator is in charge of the creation of a coalition of potential users.

The way Renault, the French automotive firm, created the innovative Twingo gives a good example of the interactive process. Described by Midler (1992)⁴⁹, the development process is based on the existence of a "project deck". In the same place, without any doors, the "project deck" regroups individuals, bringing professional skills required to develop each component of the car. Because this kind of organisation enables fast communication through continuous interaction, competitive engineering is possible, making the process more efficient. By giving the possibility to confront divergent opinions, it provides a better integration of all the constraints and then increase the development speed.

In the same direction but for service activities Jallat (1994)⁵⁰ gives a good example of the relevance of the interactive model. His work gives a good description of the means required by the French Group Accor to produce a new discount hotel concept : "Formule 1". As a new segment seems to appear on the French market, the

development team began to build a standard interaction process and the servuction system able to produce it with good profitability forecasts. No less than a first prototype building was necessary to set up the building standards. In return, the initial service process was strongly influenced by building constraints. To do so, the development team's work required interacting with external building specialists and integrating their knowledge and the constraints.

In the interactionist perspective, innovation is seen as the continuous building of a shared interest. Internal and external adopters, staff members, providers and clients, develop a shared meaning through the network created by the entrepreneur or the firm, a socio-cognitive configuration. In such a view, innovation relies on delicate, local agreements. As underlined by previous authors but also by Damanpour (1991), individual and organisational communication skills are asserted as the key component of the success. Such statements open the way to analysis based on the description of social networks, able to induce both failure or success.

C.1- Main limits of the interactionist approach

As the individual and structural perspective couldn't provide accurate insights into the development process, the interactionist standpoint tends to adopt historical research methodologies through in depth case studies. Well adapted to describe a complex, mainly non-rational phenomenon, these methodologies suffer from two main defaults as underlined by C. Slappendel. First, the interactionist perspective attempts to account for both individual and structural factors. Such a goal requires developing comprehensive analysis integrating a huge number of factors and their interaction throughout the process. The competences required are in that case so large (psychology, socio-psychology, strategy, organisation) that they could overtake the cognitive limits of the researcher. Secondly, empirical case studies focused on the process, couldn't provide results based on variance analysis. As a consequence, generalisation of conclusions could appear as limited, though they remain possible in certain conditions as underlined by Yin (1989), Gummesson (1991), Marshall and Rossman (1995)⁵¹.

Nevertheless, as in-depth comprehensive information is given about the development process, the interactive perspective provides fruitful insights that help renew the theoretical framework of the phenomenon. As stated by C. Slappendel : "Moreover, the use of this perspective is likely to increase still further because it, of the three perspectives, would appear to offer more theoretical mileage in the study of phenomena such as new organizational forms and management practices which tend to be embedded in social and historical context."

Impact of the organizational change theories on service innovation research

The previous review tends to show that service innovation will be constrained by organizational factors. The review of separate literature in different fields such as individual, structural and interactionist research, leads to a better understanding of factors influencing the development process. Four main statements stand out as follow:

First, organizational structures must be considered as the first contingency variables that affect both the nature and the process of innovation. As a result, research must integrate those factors as primary constraints. Research must be driven to analyse causal relationship between development and organisational features. Moreover, Damanpour (1991) underlined that for services, unlike production, mechanistic organisation tends to facilitate innovativeness. Though counter-intuitive, this statement means that a high level of centralisation and also a strong standardisation of work may have an influence on the innovation process. This work, partly done for products, also remains to be done for services.

In the same way, the research on other organizational features, must be led within a given kind of structure. For example, due to the differences of distribution networks and normalisation, it would be impossible to compare development processes for sectors as different as the consultancy and banking industries.

Secondly, as asserted by cognitive theories, the decision process is linked with the capacity to integrate most of the external and internal environment. It means that the cognitive resources may explain a part of the ability to innovate. A firm, strongly endowed with a large range of complementary competence will have more chance to perform only if its cognitive capacities are larger. This statement is reinforced by the findings in structural approaches concerning Specialisation and Functional Differentiation as underlined by Damanpour (1991). In such an approach, the organisational learning skills may differentiate strongly from poorly innovative companies.

Thirdly, the interactionist approach highlights the importance of internal and external environment. The "contextual rationality" perspective stress the importance of what is called "individual preferences" in the decision making process. Each member of the firm, selecting one part of the internal and external information, will develop his own range of preferences to orientate action. So, the question of innovation is one of the confrontation of divergent points of view about the same initial statement. Decisive is the way collective confrontations draw a new frame for thinking, the way that creates sense in organisation as underlined by Weick (1993)³². Therefore, the collective building of a new service may rely strongly on the firm's capacity to build shared representations of the new processes. As example, by facilitating the integration of external and internal

constraints, all the means devoted to supporting internal and external communication may appear as of first importance to increase development skills.

These statements may provide both new ways and guidelines for further research in service innovation. The theory of organisation provides the relevant frame and tools to grasp what constitutes fundamentally the essence of service renewal : a change in the way the different actors, tangibles and technology interact. Confirmed by further research, these first approaches may provide service companies with a new basis for developing the innovative processes.

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Annexes n°8: Looking for a conceptual framework for service innovation : an exploratory survey, Paper Submitted to the 10th ESIASM Conference on Service Quality.

Looking for a conceptual framework for service innovation: an exploratory survey

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Abstract:

The paper aims at the definition of a theoretical framework for service innovation. Based on a multi-level qualitative investigations, this exploratory work reports from multiple interviews within different service sectors. The results emphasised the interest of the organisational learning framework for service innovation. Moreover, the interviews highlighted the distribution network as being one of the important success factors.

Looking for a conceptual framework for service innovation: an exploratory survey

It is widely accepted by academics and practitioners that innovation is used to maintain and develop firm's competitiveness on its markets. The product renewal provides the way to develop the sales, to react to competitors, to provide new solutions to the changing expectations and needs of consumers and to diversify on other segments and markets. It is stated by Brown et Eisenhart (1995), Vesey (1991), Benjamin (1993), Jallat (1992) that the fast innovative firms achieve better results in terms of turnover, market share and finally profits.

Nevertheless, the literature in innovation, flourishing in the field of products, remains poor in the field of services. Until the middle of the 80's, most of the research didn't distinguished service innovation from product innovation. The papers which Damanpour (1991) integrate in his review demonstrated that most of the time, service and product innovation are melted in the design of the samples.

This situation is changing with a rising stream of literature focused on service marketing. From the beginning of the 80's, Berry (1980), Lovelock (1983, 1984), Eiglier et Langeard (1987), Bateson (1995) emphasised the specificity of the service companies by developing an entire theoretical body of knowledge distinct from the traditional product approaches. Linked with those efforts, a greater flow of research is devoted to understand the service innovation's mechanisms and their difference from product innovation.

Over the first exploratory research from De Brentani (1989,1990, 1991, 1995), four main streams of research may be distinguished:

- Empirical research linked with service innovation

Driven through the use of qualitative investigations, research from Hart and Service (1993), and Edgett and Jones (1991) emphasised that service innovation is impossible to understand if not linked with the firm's organisational change. Innovation is understood as a change in the servuction process, which result in the transformation of one or many component of the interaction between the client and the firm. It is asserted that the redesign of the servuction process induces an organisational change, though the links between service innovation and the organisational innovation is not formally established.

- The analysis of the innovation process.

The purpose of this research's stream is to describe the innovative process. Some of them strive to establish a link between the way a development process is driven and the final success and failure. Two main conclusions emerged from this stream:

First the contrary of what is stated by Cooper (1988), the process is far from being a linear process made of successive and rational stages. A detailed review of some innovative projects driven by Callon (1994) revealed an iterative and « whirling » process, based on successive negotiations driven by the actors involved in the process. The actors themselves « fiddle » the projects. Because each project appear to be strongly rooted in the fluctuating social group which manage the development, the main conclusion of this work is that the understanding of what happens during service innovation rely on the exam of the group's dynamic.

Second, the quantitative research driven by Jallat (1992) concluded to the absence of links existing between the formalisation of a development process and the final success. Whatever the process may be, organised or not, formalised or not, including all the well-admitted development stages or not, it is impossible to link it to a launching success. Therefore, the analysis of success could not rely on the formal management of the project itself.

Those two results reinforce the interest of the organisation perspective for service innovation. Many works emphasised that Service innovation and organisational change appeared to be closely linked. This statement has been widely developed by the organisational theory. Damanpour (1991), reviewing the main results of this stream, emphasised the links existing between innovative capability and the organisational design, as may be the centralisation, the formalisation or the number of hierarchical levels. Those results reinforce the initial statements of Burns and Stalker (1961), which demonstrated the superiority of the « organic design » over the « mechanistic design » each time innovation is concerned. One interesting conclusion of the Damanpour's findings is that the organisational features do not lead to similar result for services and products companies.

- *The analysis of the technological innovation*

Technologies support the servuction at all stages of the process. The « Formule 1 » case study, developed by Jallat (1994) underlined the crucial impact of the building technologies on the servuction processes. It must be stated that in this case, « service companies » at the contrary of most of the « products companies » must innovate in the delivery process but

without having the mastery of the support technologies. This statement limits the relevancy of most of the technological innovation concepts developed for products. As said by Gallouj (1994) : « The transfer to the service fields of the concepts and methodologies created for an industrial purpose will certainly give a wrong picture of service innovation by reducing it to the adoption processes ».

Those first statements plead for the distinction between service and product innovation. As underlined by Callon, Laredo and Rabeharisoa (1996), this difference is anchored in three major differences: « the first one <between service and product innovation> is that there *is at the same time* innovation in the product and in the procedures. The second one is that there is no separation between product innovation and organisational innovation and the third is that there is no distinction between the creation of the offer and the activity of production and/or commercialisation ». The assertion of the necessary separation between services and products innovation is not sufficient in itself to cover this field. The complexity of service activity induces confusion in the observation and understanding of the phenomena.

- First, service activities are made of an heterogeneous body of sectors which remain difficult to compare. Shostack (1977) emphasised that rather than two distinct sectors as manufacturing and services one must classify the different activities according to their tangibility or intangibility. Moreover, Hoffman and Bateson (1997) in their introduction revealed that the competitive environment but also the legal context may invalid the inter- sectorial comparisons.

- Second, due to their intangibility, the identification and follow through of the service innovation is often difficult or

Each interviewee was identified through its function in the firm and contacted. We introduced the innovation theme as the purpose of the survey. We had very few refusal, all of them in the field of consultancy were it has been impossible to obtain interviews. Each interview lasted between 1 hour and 2h30. The interviewee defined what he considered to be the end of the interview. All the interviews have been recorded on tape. We designed a thematic guide that we intend to use during the interviews in order to avoid omissions.

All the participants appeared to be strongly involved on this topic. They treated spontaneously the themes we defined previously in the interviews. We let the interviewee driving each of the themes according to its importance in the development process. We pushed the interviewees to deepen some points, which remained unclear for an external person and to explicit, the context and past history when it appeared has having influenced the decisions taken during innovation.

Each interview began by a general presentation of our purpose. Then we asked for a description of the function and place of the interviewee in the organisation chart, and also asked for a description of the services. Then we questioned for a short description of the last innovation projects implemented by the company. The term innovation has been described as any change in the offer which has impact on the final customer. Then the interviews began on one development project chosen by the interviewees.

Most of the case, interviewees selected past innovation rather than ongoing projects. Confidentiality may be one reason of this choice. But we will see latter that the temporal perspective may induce a change in the interviewee point of view due for example to the ex-post rationalisations. It is easy to develop

different point of view on the same decision before, during and after an event. We selected systematically past innovation, whatever they were successful or not.

The limits of our research are linked to the qualitative methodology but also to the function of the interviewees:

- The results of a qualitative survey are difficult to generalise. This was not our purpose here. Rather than trying to produce quantitative evidence supporting a given model, we tried use our material to identify the perspectives which should produce a relevant theoretical frames and models.

- As one of our statements has been that service innovation was a collective project, the second limit of this work is the question of who is interviewed. Crossing the different and may be diverging point of views within the same company should have reinforce our statements. In this perspective, the design of a sample may appear as crucial to relate from innovative projects. We selected our results by integrating this objection and by deleting the declarations that were not stated in many organisations.

- The last limit, which must be developed, is linked to the initial choice of inter-sectorial firms. As the contexts, the processes, the networks and the organisational features are very different, the validity of comparisons remains problematic. We selected in our results, the themes which appear to be common to many firms. This suggests that the replication of our results, if based on different sample, should lead to similar results but would probably add new themes. This statement and the observations lead to be very cautious about the choice of inter sectorial samples.

2) The results

Four major themes emerged from the interviews. We selected them because they concerned all the companies included in the sample. We tried to develop the main observation and then to conclude on the involvement for further research.

A. Nature of the Innovation: Processes and Know-How

Innovation refers to multiple practises within the firms. We observed difference in the nature of has been transformed and in the actors involved into the process.

In some cases, the concept of innovation may only conceived as the adding of a a new service to the existing portfolio. The core service in catering does not offer many possibilities for innovation. But it is easy to add complementary performances or to create through the physical evidence or through the promotion a particular atmosphere. At the opposite in the case of the training products, it is possible to innovate by removing the content of the courses and/or by changing the architecture of the training program. The interviews suggested that in this last case, the integration of new know how was required to achieve the expected goals.

Those examples demonstrated that the concept of innovation cover multiple practises, some of them being focused on the surroundings of the core know how, the others being in depth change of it. We tried to classify those statements according to these criteria in the figure 2. The firms have not an exclusive strategy of development. When the Credit Mutual offered the management of the account by the use of Internet, they created an improvement of an existing performance, which is not fundamentally different from the one achieved through the cash dispenser. But the same firm innovated by creating insurance products. In this case the launching requires creating a new body of

knowledge, which cover the entire process from the creation of the offer to its selling within the network.

Similarly, the specific contexts of each market and past of the firm influenced strongly the team composition in charge of the development processes. In one case, the development must integrate external partners into the development projects. In the other, the offer is developed internally, on the request of the local authorities, in a pre-defined and very tight legal framework. At last, some firms have to distribute their services through a huge network, made of numerous outlets hard to convince of the potential benefits of the offer. In this case, the development process integrate the network's constraints by the integration in the development team of some network's members. In the other cases, the offer is created and distributed by the same person. Therefore, the nature of the team involved in the development process appeared to be very contingent.

As our statements are that the groups already in charge of the existing processes support the innovation, then one must forget the idea of creation from nothing. In this sense, the new processes are based on the existing one, whatever they might be analytical tools, the existing service portfolios, the already tested servuction processes. Thus the existing procedures and processes may be combined with the new one by different ways. Innovation may results from the integration of competitors, from the addition of a specific characteristic to the core business, from the sharing of the practises between many servuction places and from alliances between the actors themselves. If the project could not rely on the existing know-how and procedures, then the chances of failures are increased: "Less and less new activities are doing by ourselves. Having one or two well skilled professional is not sufficient to develop the

business on one given sector. The human development strategies, implemented in order to train the staff to multiple competencies have failed. Our statement was that on our targeted markets, competitors were different from us, computer means were different, and the know-how was different. Our conclusion has been that we were wrong. The, we have chosen to create alliances with companies, which have the entire know-how on those markets...”

This statement leads to analyse the negotiation and decision process as based on the knowledge of the actors. Making choices means to use its own knowledge in order to avoid random choices. In such a perspective, the technology in service should be based on the existing knowledge rather than on any technical objects. Changing the processes means to transform the knowledge, which lead to the existing choices.

What is stated for the company is apply similarly for the consumers. If not trained to the new interaction processes, the clients will use the knowledge previously acquired. As result, one reason of failure of the innovation may be an inappropriate behaviour of the client. As the management of knowledge is a factor of success for the people in charge of the development, the change of the client's knowledge must be considered as having a strong influence on the final result.

This statement leads some managers to create specific procedures which aims at the training of the client. As example, in some case, the reasons of innovation have been promoted before the project began. Then during and after the change, the staff's members explained with the help of leaflets what has changed and what was the new process. By doing so the managers changed the information and the existing

know-how in order to replace them by the expected behaviours.

The sole concept of innovation hide very different processes. This suggests that the greatest attention must be given to research developing inter-sectorial approaches. This same recommendation must be done for intra-sectorial research as may be the one of de Brentani (1989, 1990, 1991, 1995).

B. Success or Failure as Ex Post Rationalisation.

The exam of the purposes and goals of the projects revealed astonishing divergences. The interviewees do not necessarily develop concepts as the profit, the contribution to the final result, the impact on market share. In some case, a negative profitability results in a paradoxical and positive assessment. Because service innovation may cover a great variability of change, as the transformation of physical surroundings or a minor change in one part of the process, the direct impact on profitability is often difficult to demonstrate. Such paradoxical result may be observed each time the consumer adopted multiple products as in the bank. Even if one product contribute negatively to the result, its effects are evaluated positively in terms of customer's loyalty. In another case, the computing department decides the validation of the failure by the deletion of the services having to few financial movements. Therefore, the way the managers evaluate the results of an innovation remains to be investigated. We summarised in the figure n°3 the main criteria which have been quoted during our survey.

This statement of the divergence in the setting of the goals is due at last to three main reasons, linked to the measurement

limits, to the progressive emergence of the goals and to the internal divergences.

B.1. The measurement limits

The measurement of the innovation's contribution is very frequently difficult to achieve. The case of the development of new physical evidences in a restaurant illustrated this point. It is difficult to identify the increasing of the results directly linked to the change. Comparatively, it is easier to analyse the results of a given product, even in case of its integration in a broad range. As result, the interpretation of what is a success or a failure remain more open and support the emergence of qualitative criteria as may be the contribution to the image or the motivation of the distribution network.

In all the cases, one must state that the results are not analysed through one sole criterion. The assessment of the performance relies on the creation of a mix of results including most of the goals quoted above. The weight of each of them in the final result is probably very complex and appears to be closely linked to the perception of the context and of the competitor behaviours. Because this assessment is closely linked to the position of the interviewee, the final assessment by the company appeared difficult to anticipate.

B.2. Progressive emergence of the goals.

It must be stated that the sense of innovation emerges progressively. The goals are not established once and for all at the beginning of the project. They are described as being negotiated all along the creation. In this perspective, the metaphor of the potter who shapes progressively a bowl of clay in order to obtain both a form

and a function, could give an good image of the process. The organisation gives sense progressively to a new process or a new organisational feature by successive negotiations. This emergence is a collective interpretation of reality, negotiated during the meetings, the formal presentations and the individual interactions that support the innovative process. The project may be considered as going one step further only when a shared vision of what must be the future process is achieved, only when its utility for the actors and the client is recognised and admitted. The innovating, at the opposite of innovation that refers to the final result, must be considered as a continuous flow of interpretations of the situations until a stable image of the final result may be achieved. As result, the emergence of the goals reflects this interpretation process. The goal assignments require a previous interpretation of the situations. Innovating means at last to obtain some kind of consensus on the situation. This more or less formal agreement will support the building of a collective action, made of many co-ordinate behaviours. Innovating means to building of a collective interpretation when innovation (in the sense of the final result) means having reduced the ambiguity of the managerial situations.

B.3. Internal divergences

Due to the previous statement, it is difficult for an external observant to assess the success of failure of an innovation. The goals emphasised by two actors of the same organisation may largely diverge. The manager of a restaurant who is focused on the short term result, will probably favour a specific mix of results which will not fit to the marketer or to the general manager. As a result, the interest of a given innovation may be considered under diverging perspective. If the multiple

interpretations lead to diverging point of views then the achievement of a new co-ordination will be impossible to create. At the opposite, the convergence of the interpretations entails the co-ordination of the behaviours. Thus, the assertion of a success is to be considered as the final convergence of the successive interpretations realised all along the process. The verbatim on success and failure is an ex-post rationalisation build as a way to legitimate the results achieved. By doing so, the organisational members close the interpretation processes and anchored the sense of this event on the meaning adopted by organisation.

One involvement of this statement is that it seems to be difficult to design research methodologies based on the opinions of the organisational members on the reasons of success and failure of innovation. Because of this interpretation process, the perceptions of a manager should be considered as linked with one interpretation adopted internally, and not necessarily correlated with the contexts, and actual situation. The other conclusion of this statement is that research should benefit from investigations on the factors which facilitate the interpretation process. What may be the concern of inquiry should be the organisational sensemaking rather than the stages of the development process or even the result in itself. Rather than being focus on the markets configurations or on the final results, a research on innovation should benefit from a deeper attention on the interpretations and of the factors which facilitate or prevent the convergence within the organisation. The review made by Brown and Eisenhardt (1989) but for products reinforce this statement.

C. Influence of the distribution network:

The innovation process appears to be closely linked to the ways the service is distributed. When the service is delivered through a network, the interviewees emphasised the crucial role of the network. The launching is strongly dependent from the agreement of the network's members. This statement lead to three conclusions. The existence of a distribution network impacts on the way the innovation development. It is therefore possible to distinguish service companies according to their distribution network. Second the innovation rely on the sharing of given procedures which must be reproduced all over the network in order to deliver a standardised service. Third the learning processes are at the heart of the innovation process.

C.1. Impact of the distribution network on the innovation process.

Because, the distribution network produces the service at the same time it is delivered, two broad kind of processes may be observed due to the existence of the distribution network. When the service is delivered directly by the people in charge of the conception, as in the training firm we interviewed, frequent adjustments and change of the initial offer will occur. It is possible to adapt the offer according to the expectations and reactions of the client. The innovation, understood as the modification of the procedures, is an ongoing process. Each time the service is delivered through multiple outlets, then procedures must be standardised. Thus one can observe the writing of procedures, the training and motivation of the people in charge of the delivery, the implementation of quality procedures. The intangible service become more tangible due to the many means used to implement common ways of servuctions. It may be said that the distribution network constraints the innovation process in many ways.

Moreover, the comparisons of the verbatim highlighted that innovation may occur on three levels. First, the innovation may be linked to the strategic purposes. In this case, the general management gives the initial impulse, in our cases linked to the positioning of the company. It initiated the task forces, the working groups and the other means used to achieve the development. The second level of innovation is linked to the product manager or to the marketing. This level will define within the existing activities the modifications or change which will be implemented all over the distribution network. To those two well known levels, common to the production and service companies, it is stated a third level specific to the firms having a distribution network. Each of the outlets will face a specific context that entails an adaptation of the standardised procedures. The complex and diverse local situations lead to a third level of innovation. The example given in our interviews is the one of the implementation of an hotel in a place well known for security troubles. To the standardised implementation of the building, it has been added specific protection means, not initially forecasted in the project. To the initial set of procedures defining the innovation one must add their local adaptation in order to fit with the local contexts. Because of this adaptation level, the service companies delivering their processes through a distribution network (the case of hostelry or of the catering sector) must be separated from the other companies.

Different levels of innovation and the importance of the formalisation of the procedures leads to the adoption of the distribution network as a segmentation criteria in the creation of the samples of respondents. As example, the financial sector offer services either through its network or by distance delivery. In those cases, the research must integrate questions

relative to the way the service is delivered. As this statement invalidate the building of global samples mixing service firms without integrating the nature of their distribution network, the selection of the respondents according to this criteria should reinforce the validity of the results. This same statement should be done for the intra sectorial research.

C.2- Innovation requires the sharing of procedures.

It is at the level of the outlet that the new interaction process with the client will be created. Therefore innovation is re-created by each of the distribution's member during the interaction. This suggests that innovation is mostly intangible because being fundamentally a process of interaction. It exists through the people who support its occurrence. This perspective renews the traditional approach of an innovation embodied in an object. Thus, the network's members of the same way of considering the interaction process may define the success as the adoption. The achievement of such result relies on the implementation of a very diverse set of means, aiming at the innovation's adoption but also at the overcoming of the resistance to change. Pull and push strategies are developed, as we will present bellow.

C.2.1. Integration of the distribution constraints in the early stages.

A common mean used seems to integrate distribution's members in the first stages of the development process. Two of the catering groups submitted any project to the validation of working groups made of managers of the restaurants. Another firm refuses any project before their formal and informal presentation to the network's members. Most of the companies integrated network's members in the working groups in charge of the

development. By doing so, the admitted intent is at the same time to integrate the constraints of the operations and to favour the adoption of the project by increasing the confidence of network's members. As said by an interviewee: "The problem of the network is that I was afraid to give them more power, or at last more autonomy, because I anticipated from them unexpected initiative. They did so and now, after many negotiations we have found a medium position by saying no, in this case this is not your responsibility it is mine. In the promotion or in the concept, this is your part and this is mine.". As we said previously, the integration of the network's member introduces the importance of the negotiation process. If a proposition appeared to be too far from the network's perceptions, it will be invalidated. This negotiation could overcome in some case the expectations of the consumer: "Too often one has build promotions which was important for us <the general manager> and not for this given outlet. The problem with the network is the frequent feeling that one commercial action is good for the others outlets but not for the one which is considered. As result we are today in another excess. We build operation, which are good for the network and if so, the client will accept it. But in all the case, the network has such a power of inertia that it could stop any project". Such problems as the one of the adoption by the network may not exist in direct selling firms.

C.2.2. Selection of "open" innovation.

One of the strategies adopted in order to facilitate the adoption is to create a process which remains to be adapted to the local requirements. The architecture of the new service, based on the computer's programs and on the cost's structure is common to an entire network and provide the mean to achieve economies of scales. But its

appearance (the communication, the presentation to the client, the leaflets and promotional support, the brand) is realised by each of the network entity. The adopted goal is to facilitate the adoption by facilitating its adaptation. The open innovation is similar to the delayed differentiation strategies used in manufacturing. But the difference in this case is that the last actors of the decision chain create the finalisation of the offer. This reinforces the distinction which must be done between the service firms according to their distribution network.

C.3- Innovation as a process of learning.

The perspective of the innovation as a progressive sharing of new procedures emphasised the learning as one of the main factor of the development process. Because this object is intangible, the creation of the procedures is difficult to transform into actual results which can be tested. This problem resulted in specific way of managing the development as may be life size tests and the training of the people.

C.3.a- Life size tests

The launching process integrates most of the time some pre-launching stages or life size tests at a small scale. Only by life size test it is possible to test intangible and interactive propositions. Though the research methodology could be the same, each of these tests may appear as more complicated to produce than for tangible goods. They require the development of the entire means even when they are not entirely designed. The example of the launching of a new bank service illustrated this point. The marketers where interested to know what could be the number of segments in order to know the number of the different offers they had to create. To do so required interviewing the potential

client in order to measure their reaction to the first drafts. This test which could be very simple to implement for a product, entailed to train some sales people, to create at a small scale leaflets, and to build short computing programs in order to simulate the consequence of the choice for the client. At last this test required the creation of the entire offer including the training of the people.

Testing the intangible required transforming it into formal procedures before being able to test something. By doing so, the organisation had to invest strongly as if the service already existed. Such tests, because they involved directly the consumers and the entire organisation in a long process are very costly. It must be considered that their replication remains difficult to achieve. This question raises the problem of learning. If the implementation of each of the stages of the process is difficult to materialise, how do the organisational members to verify their first intuitions. How can they refine the initial ideas. How can they transmit them to the other part of the organisation and how do they transform them into formal specifications.

Because our methodology do not integrate a multilevel approach it was difficult for us to find observations which can contribute to provide explicit answers. Nevertheless, it can be deduced from some of our interviews that this result is mainly achieved through internal communication which appeared to be the main way used by the actors to tests their ideas.

C.3.2. Training the network's members.

During the interviews, the training system is clearly perceived as one crucial factor of success. In one case, the launching has been delayed in order to implement the training or people in charge of the service. The strong focus, materialised by multiple

training programs existing in the firms, reinforce the interpretation of innovation as a learning process. The network's adoption is basically made of the learning, agreement and reproduction of the expected behaviours and procedures that will support the service. Therefore, the habits and culture of training, as may be the frequent use of process formalisation (process chart flow, formalised norms and procedures), should facilitate the implementation of innovations.

As we states innovation is strongly anchored in collective learning practises, linked to the distribution networks. This reinforces a collective vision of innovation.

D. New service development as a collective work.

The metaphor of the inventor or of the innovator appears to be non-relevant for the companies we interviewed. Innovation is realised by tasks forces, working groups and also of informal groups of actors which role is to create the new commercial offers. The classic distinction realised in the economic literature between the inventor and the innovator has no sense when applied to the transformation of the servuction processes.

Our interviewees have mentioned any R&D department, even if the technologies supporting the processes are very complex. Therefore, an innovation model, which do not integrate the social game, should lead to invalid conclusions. As said by one respondent: "It is difficult to go ahead as long as the group is heterogeneous. But in one case, we observed that the people in charge of the process where hardly out there firms. What they decided was supported by the group agreement and not necessarily by the firms where they belong <in this case, the innovation associated multiple companies>. They where so

internally coherent that they forgot to inform the firm's managers". This collective process is supported by many observations related to the team building and the internal negotiation.

Innovation is described as a change in the rules and procedures that impact on the social relations existing within the outlets. The respondent underlined that the changes must fit the existing constraints (turnover goals, productivity, existing reporting, acquired know-how) and to the formal and informal structures. To do so, the development teams are defined in order to represent the each of the functional department. Each of them is selected according to its knowledge of the constraints linked to each job and to transmit them to the other members of the group during the successive adjustment process. As said by one respondent "or firm is strongly growing of more than 25% per year with a lot of new people integrated each year. The best mean to make they adopt a project is that they contributed to its birth. External consultants are heard but it is difficult to transform their recommendation into actual actions.... Integrate those actors in the project entail that one accepted to integrate all along the development the people's remarks. Project management is made of the setting of the goals and of the suppleness in the implementation.... What is made is the result of the entire group".

This organisation in multi-functional groups refers to the adhocratie. Mintzberg (1982) defined it as "an organisational structure with very few formalisation of behaviours, An important use of communication to support the mutual adjustment within the teams and between the groups". The author underlined the links existing between this organisational form and the innovation: "to innovate means to establish a rupture with the existing routines. The innovative

organisation can not rely on any of the established forms of standardisation in order to co-ordinate its activities". Though we didn't directly observed this kind of organisation, many interviews described that this choice has been made spontaneously when innovation was to be created.

The mutual adjustment relies on the creation of an internal contract in which each of the organisational members explained its own wishes and constraints and integrate the other's wishes and constraints. Innovating means the setting of an agreement defining the new rules of the game through successive negotiations. The success results from the achievement of a compromise between all the involved actors. This statement hugely developed by the respondents all along the interviews are also mentioned in the other empirical research.

This perspective of successive negotiations explain the non-linearity of the development process and by so its unpredictability. It the logic of the development is the one of the negotiation, then each stage must be considered as the unpredictable result of the interactions between staff members, each of those decisions inducing the following situation. During this progress, new configurations, ideas and concepts are proposed in order to solve the problems encountered during the development. This could not be considered as a linear, rational and predictable process. Any of the interviewees relate from a standard process that could constitute the architecture common to all the development. Each project is unique either by the persons involved or by the decisions themselves.

This statement invalidates the representations of the innovation as a rational and well-organised process, driven by well-defined members of the

organisation. Such perspective, which describes the innovative journey as a succession of many stages, defined in a structured planning, is clearly invalidated by our statements. If it is possible, after the process, to rationalise and to describe the planning, the actual process is made of constant retroactive loops, of go-back exchange between the actors who are often changing all along the project.

The only marks emerging from what could appear as a muddled and chaotic action seems to be the formal presentation of the project. They are described by all as the crucial moments where the becoming of the innovation is decided. Those events may be the formal presentation to external partners, or a review made for the general management. During those presentations a clear description of the project, of its planning and of its budget is developed. Because of the formalisation's efforts, the project is being materialised through the use of written and explicit descriptions. Over the explicitation of the project, what is underway is the negotiation of the substance of the project, of its interest for the different internal and external actors involved. Those formal presentations, by making explicit the adopted rules, procedures and purpose of the new service is commonly used to materialise the intangible and to share with the other organisational members. Those moments are the ways that are used in order to create progressively what all the organisational members will consider as the new service.

3) The methodological approach

The statements we did suffered from the weaknesses linked to the qualitative research. If generalisation remains difficult to achieve, most of the observations contributed to orientate further research.

One of the first statements, which emerge from our observations, is that, it would be difficult to separate the innovative process from the social context which support it. To do so would entail the existence of an immanent order that should constrain each decision. At the opposite, we observed an intricate flow of actor's motives, of decisions linked to each other by retro active effects, of actions linked to the past and the present of the organisation. In other words, there is no pre-definite way for innovation. All possibilities remain open at each moment if the actors who support them create and implement them. This invalidates the explanation of the innovative process by the final result. The commonly used perspective, which tried retrospectively to link the success or failure of the final result to a set of variables, doesn't relate from the actor's point of view in the successive decisions taken all along the development. Thus the retrospective approaches should lead to weak or invalid conclusions. To the retrospective perspective, one must focus on the one of the actors themselves, on the inside of the "black box", in the daily life of the projects and of the individuals.

This analysis lead to the conclusion that the research focused on the identification of success factors due to the development process itself should lead to dead ends. Due to the social diversity, any stage may be considered as systematically linked to the success of a project. Each project corresponds to a specific history and process. This statement advocates for the use of historic and longitudinal methodologies, which may report from the dynamic of the phenomenon and from its context. The understanding of what happens relies on this close exam.

Does this strong influence of the contexts, organisations and individuals reduce the innovation to some kind of random journey. Is it impossible to generalise the

valid experience by saying that the final result is more a question of chance than the one of specific skills. Three statements lead to identify the rationality of the decisions linked to innovation. First, each of the actors will use the innovation in order to achieve its own purposes, or use it to influence the context in a positive way. This means that the innovation is not only an answer to competitors but also a way to transform the internal situation in the favour of one or many actors. Second the organisation may facilitate or prevent the actor's initiative by supporting the transformation of the structure. Third, the transformation of the existing structures requires creating convincing alternatives, fully tested and producing effective results. Therefore, the innovation appears to be a learning process. The adoption of new solutions seems to be closely linked with their potential results, measured through the use of tests and validation processes. Thus the acceptance of the alternative solutions rely on the possibility to learn from the situations.

As result, two theoretical frameworks seem to be able to relate from service innovation. First, the socio-technical innovation theory developed by Callon and Latour (1994, 1996), but also the one of the Crozier and Friedberg (1978) or of N Alter (1993) focused on sociology of organisation should relate from the way the coalitions of actors could support an innovation project. This first theoretical frame supports the links existing between the individual's interpretations of the situations and the collective projects. It relates also from the conditions that lead the actors to adopt, support and share a new process with other organisational members.

The second theoretical frame is the one of the organisational learning. The participants underlined the importance of learning all along the development process.

It is explained by many of them that the design and the reproduction of a given procedure by multiple outlets rely on the learning by each of the outlet's member of what must be done. Moreover, it is asserted that the adoption of the new procedures is directly linked to their learning by each of their members. In order to support learning, many means are commonly used as the training of the network's members, the testing of the consumer reactions and by the use of internal tests. Even if this theme is not entirely formalised by the respondents, even if the organisational factors which supports or prevent learning have not been formally developed, it is noticed in the interviews that most of the means used to develop new services are based on learning strategies. This statement reinforces existing research on the topic. N Alter (1993) suggests that the general management is able to support the action of innovators which are changing the recipes of efficiency previously learned. Similarly, the organisational culture as developed by P Bernoux (1995) influence the learning capacity by providing material and symbolic incitements to create new processes. Though we had only an exploratory approach of those factors, the interviews revealed that the interpersonal relationship, the hierarchic structures, the nature of the tasks, the risk's acceptance must influence the number of innovations developed by the firms. Thus, because it provides a good understanding of the actor's decisions, organisational learning appears as providing an interesting theoretical framework for service innovation.

4) As conclusion

This research attempted to define the service innovation phenomena. It underlined that this phenomenon is deeply anchored in the organisation theory, with a specific interest of the organisational learning concepts. This suggests that research on service innovation must be focused on the actors and organisations that may relate from its rational part. This research supports the assertions of F Gallouj (1994): “service develop innovation patterns which are independent from the technological possibilities.

Because those specific ways should have a growing importance in a near future, they deserve a deeper attention from research”. The adoption of the organisational perspective on service innovation should lead to operational results and actionable knowledge as defined by Argirys (1994). By this way, the research on service innovation will remove from a first and exploratory stage.

Angers, Revu le 5-4-2000.

Figure 1: Firm's selection for the interviews

Firms	Sectors	Product's Intangibility	Distribution Network
COFINOGA	Accreditive Cards	Strong Intangibility	Network made of independant partners having their own legal status.
CREDIT MUTUEL	Local federation Building Society delivering credit, financial products and indurance to individual and companies	Strong intangibility	Network of agencies associated within the same federation
CREDIT MUTUEL	National federation having the same purpose but in charge of the co-ordination and support of the regional federations	Strong Intangibility	National federation
CREDIT IMMOBILIER DE FRANCE	Credit for the individual buildings	Strong Intangibility	Network of firms, linked through a formalised and legal contract.
MAC DONALDS-	Fast Food	Mix Products-Services	Network made of independant companies linked through a franchising contract.
SODEXHO	Catering for companies	Mix Products-Services	Heterogeneous network, not integrated.
COURTE PAILLE	Theme restaurants	Mix Products-Services	Network made of integrated outlets
GENERALE DE RESTAURATION	Catering for companies	Mix Products-Services	Network made of integrated and non integrated outlets.
HOTELS MERCURE	Hostellery and restaurant	Mix Products-Services	Network made of a mix of franchised and integrated outlets
MAISONS FAMILIALES	Training for adults	Strong intangibility	The training center we interviewed is member of a national federation. It remains independant for the management.
THYSSEN ASCENSEURS	After Sales Service	Mix Products-Services	Network made of franchisee and integrated distributors.
ENTREPRISE DE TRANSPORT URBAIN	Trnasportation of passengers	Strong intangibility	Any distribution network. Local distribution network for the tickets.

Figure n° 2: Categories of process innovation

	New Process		
		Performance added to existing processes	Creation of a new process
	Existing Knowledge	Promotion of the new products on a menu (Mac Do) through the disposal of posters and change of the atmosphere	Redesign of the offer for the children (menus-welcome-free gifts), but based on an existing menu (Courte Paille)
	New Knowledge	Management of the account by the use of Internet (Crédit Mutuel)	Design of Insurance product for the cars and the houses which are added to the bank products. (Crédit Mutuel)

Figure n°3: Success and Failure Criteria

Criteria_	Definition for the interviewee	Nature of the measure
Profitability	-Non strictly quoted by probably integrated in an assessment process -The formal definition of the profits results are not defined or quoted during the discussion despite formal question on them. May be the result of confidentiality or of ignorance	Quantitative
Reaction to competition	-Frequently stated by all the interviewees. The perception of the competitors (nature of the information, importance of the criteria, nature of competitors actions) is said to have a great influence on the firm's behaviour.	Qualitative
Differentiation,	-The pre-emption of a positioning is criteria in itself	Qualitative
Market Share	-The market share is not used to measure quantitatively the efficiency of a given service. Nevertheless, the market share is commonly used to measure the global result of the company.	Quantitative
Increasing of the turnover.	-The new service must contribute to the increasing of the turnover. Those criteria is often quoted by the interviewees. -But very few accurate purpose, figures and results have been reported.	Quantitative
Increasing of the demand	-Quoted marginally. But in one case, this was one of the major purposes of the development for the new service.	Quantitative
Customer Loyalty	-Frequently quoted. -Is used to justify the adding of complementary services. -No evidence of accurate measures	Quantitative
Image	-Contribute to the firm image -Not formally assessed	Quantitative Qualitative
Contribution to the strategy	-Stated in the case of intends change or acquisition of know how.	Qualitative Quantitative
Management	-The innovation contributes also to the motivation of the sales force and of the distribution network.	Qualitative

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